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AUTHOR Jenks, Charles L.; And Others
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ABSTRACT

Increasingly, schools are being asked to be explicit about what they intend to accomplish, how they are going to accomplish their intents, and how well they have succeeded. This training unit seeks to assist school personnel in one of the essential phases of these three tasks, that of translating long-range educational goals into usable objectives that will provide guidance in selecting curricula that will contribute toward students' accomplishment of the goals and that will provide guidance in measuring the effectiveness of the selected programs. The unit emphasizes the importance of viewing goal refinement as a logical and continuous process. This means that goals are translated into increasingly specific objectives that logically follow the previous level until a useful level is reached, and that the results of the process should not be viewed as final but as subject to constant review and revision by users. The four modules in this unit cover the goal refinement process, the screening of objectives, the analysis of sets of curricular objectives, and the district planning for goal refinement. (Author/IRT)

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Training Unit 3

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Deriving Objectives

CHARLES L. JENKS :: NANCY G. BOSTICK :: J. GREGORY OTTO

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Produced By

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PREFACE

Increasingly, schools are being asked to be explicit about what they intend to accomplish, how they are going to accomplish their intents, and how well they have succeeded.

This training unit seeks to assist school personnel in one of the essential phases of these three tasks, that of translating long-range educational goals into usable objectives that will:

1. provide guidance in selecting curricula that will contribute toward students' accomplishment of the goals, and,

2. provide guidance in measuring the effectiveness of the selected programs.

The unit emphasizes the importance of viewing goal refinement as a logical and continuous process. This means that goals are translated into increasingly specific objectives that logically follow the previous level until a useful level is reached; and that the results of the process should not be viewed as final but as subject to constant review and revision by users.

Deriving Objectives is viewed as part of the process of goal refinement. Setting goals is not a "new thing" for schools. Many districts have devoted considerable effort toward determining broad goals. However, the translation of goals into usable objectives is less often accomplished.

Most school people recognize that goals are usually too general to provide much in the way of direction. In their "general state" they all appear worthwhile. However, unanimity exists because they are so general. Using broad goals as banners under which people will rally is one thing. Using them as guides to action is quite another. Thus, refinement of goals into more specific statements of hoped-for learning outcomes is important if schools want to make effective instructional use of them.

Before beginning the training activities, please read the discussion of the goal refinement process carefully (pp. ix-xii). It is intended to acquaint you with some of the major terms and concepts around which the unit is based. For additional help, a glossary of terms is included in the appendix.

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THE GOAL REFINEMENT PROCESS

Goal refinement is a series of steps for determining the desired states or intended student outcomes that the instructional program is designed to achieve. Each of the five basic steps[1] of the goal refinement process produces desired states which differ in specificity and/or in whether they emphasize life-related or school-related outcomes. The five types of desired states which are determined at each step are:

EDUCATIONAL PHILOSOPHY
GOALS
GOAL INDICATORS
CURRICULAR OBJECTIVES
INSTRUCTIONAL OBJECTIVES

1. EDUCATIONAL PHILOSOPHY

DEFINITION: A COMPOSITE STATEMENT BASED UPON BELIEFS, CONCEPTS, AND ATTITUDES FROM WHICH THE EDUCATIONAL PURPOSE OF THE DISTRICT IS DERIVED.

SOME EXAMPLES: *All students must be provided a good program of general education to aid them in becoming effective citizens in a democracy.*

We believe that the schools should foster optimum individual development in various aspects of living: mental, physical, social, or moral.

The schools exist for the transmission of culture to our youth and also to aid them in developing an improved culture.

As the examples illustrate, the desired states determine at this step of goal refinement are generally conceived and phrased in terms of life-long aims, and are very general.

2. GOALS

DEFINITION: GOALS STATE, IN HIGHLY ABSTRACT TERMS, DESIRED AND VALUED COMPETENCES, STATES OF BEING, AND/OR GENERAL LEVELS OF PROFICIENCY TO BE ACHIEVED. GOALS ARE ACHIEVED THROUGH THE ACCOMPLISHMENT OF OBJECTIVES WITHIN AN EDUCATIONAL ENTITY, WHICH MAY, IN THIS CASE, REFER TO A HIGH SCHOOL, ELEMENTARY, OR UNIFIED DISTRICT, OR A SCHOOL BUILDING OR CLASSROOM.

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1. Some of the definitions and examples of desired states resulting from each step of goal refinement are based on "Educational Goals and Objectives in California," a study prepared by the School Instructional Program Committee for the California School Board Association, 1969.

SOME EXAMPLES: *The school program should help every learner to acquire those skills, knowledges, and attitudes required for independent, autonomous learning.*

Education should provide each person with understanding and acceptance of individuals or groups belonging to diverse cultures.

A number of goals generally can be derived from statements of educational philosophy. Goals are usually concerned with life outcomes, but are more specific than are statements of philosophy.

3. GOAL INDICATORS

DEFINITION: GOAL INDICATORS ARE THE LONG-RANGE BEHAVIORS THAT GIVE OBSERVABLE EVIDENCE OF THE ACHIEVEMENT OF A PARTICULAR GOAL.

SOME EXAMPLES: *Graduates will have a habit of leisure-time reading that keeps them well informed about current events.*

The student will behave with respect toward people of other cultural groups whom he encounters in work or leisure situations.

A well-educated individual will be able to maintain a balanced budget.

Goal indicators are more specific than goals, but are still life-related. Some goal indicators are observable within the school context. They are a useful step between the goals and the next stages of refinement, which deal with two levels of objectives.

OBJECTIVES

DEFINITION: AN OBJECTIVE IS A QUANTIFIABLE AND/OR OBSERVABLE ACHIEVEMENT ACCOMPLISHED UNDER SPECIFIABLE CONDITIONS. OBJECTIVES SHOULD REFLECT THE CRITICAL FACTORS REQUIRED FOR THE ACHIEVEMENT OF A GOAL.

Objectives can be found directed toward meeting goals at many levels. For instance, objectives can be stated for curricular, course, or daily classroom assignments.

However, when initially specifying objectives for your district, it can be helpful to consider objectives primarily at two levels: curricular objectives and instructional objectives.

4. CURRICULAR OBJECTIVES

DEFINITION: COMPETENCES WHICH RESULT FROM STUDENT INVOLVEMENT IN CURRICULA OR PROGRAMS OF STUDY (SUCH AS THE SCIENCE CURRICULUM, DRIVER EDUCATION, ETC.). THEY CONSIST OF THE SKILLS DIRECTLY RELATED TO PARTICULAR DISCIPLINES.

SOME EXAMPLES: *Students will be able to read different types of materials, e.g., literature, news articles, scientific articles, business forms, etc. with speed and correct interpretation.*

The student will know the major cultural patterns and norms that characterize the peoples of different countries studied in geography.

The student will be able to define, give examples of, and apply economic principles such as credit, debit, interest, profit, etc.

Thus curricular objectives are more specific than goal indicators. They are school-related, with the desired outcomes phrased in terms of measurable behaviors that students are expected to demonstrate within the school context. Thus student achievement may be evaluated. Furthermore, they usually identify the curricular or program area(s) in which the behavior is to be taught and demonstrated.

5. INSTRUCTIONAL OBJECTIVES

DEFINITION: COMPETENCES WHICH INCLUDE WHAT THE LEARNER IS TO KNOW, BE ABLE TO DO, OR WILL DEMONSTRATE AS A CONSEQUENCE OF INSTRUCTION, THE IMPORTANT CONDITIONS UNDER WHICH HE WILL PERFORM, AND THE LEVEL OF ACCEPTABLE PERFORMANCE. THEY ARE SHORT-TERM, MAY BE MEASURABLE AS A CONSEQUENCE OF SEVERAL DAYS OF INSTRUCTION, AND MAY REPRESENT ACHIEVEMENT TOWARD CURRICULAR OBJECTIVES.

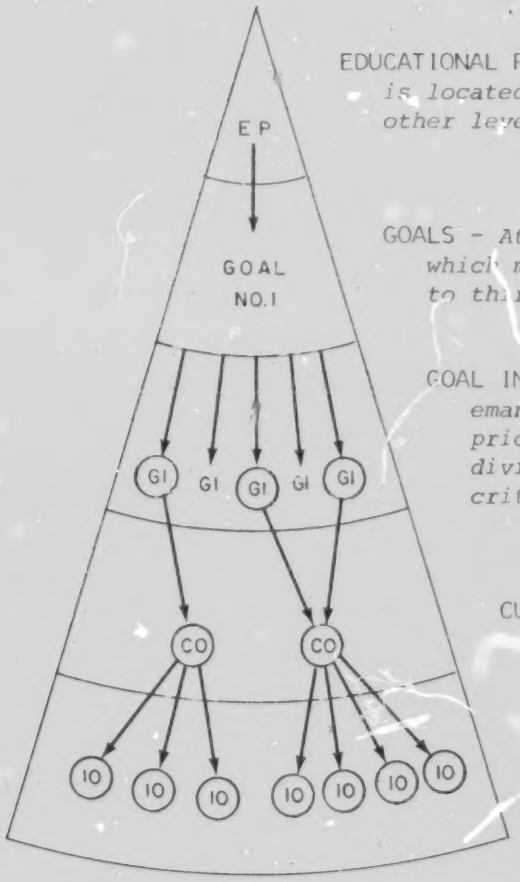
SOME EXAMPLES: *Given a daily newspaper the student will be able to analyze three of the front page stories and write a topic outline for these articles within a two-hour period, identifying 90% of the topic sentences and using correct outlining notation.*

When presented with a statement regarding a controversial issue (e.g., racial prejudice, etc.) the student will seek out and examine at least two other viewpoints, identify each, compare and contrast, and then state within a specified time his final opinion regarding the issue.

Using a simulated set of data, the student will analyze a set of budget figures, determine the computational errors contained in the figures, and correctly explain the economic principles(s) underlying each error.

Thus instructional objectives are usually very specific in terms of behavior, conditions, and standards, and are testable within the school context.

The following figure shows the relationship among the five types of desired states. It illustrates only a "pie slice" of an entire circular diagram of the district's desired states, from philosophy to instructional objectives.



EDUCATIONAL PHILOSOPHY -*The Educational Philosophy is located in the center, as a focus, and the other levels of the desired state emanate from it.*

GOALS - *At the next level outward are the goals, which might range in number from perhaps three to thirty.*

GOAL INDICATORS - *Potential goal indicators emanate from each goal. A set of high-priority goal indicators, those that individually and as a set meet certain criteria, produce...*

CURRICULAR OBJECTIVES

INSTRUCTIONAL OBJECTIVES - *Finally, at the outermost ring of the circle are instructional objectives related to each curricular objective.*

These five types of desired states --Educational Philosophy, Goals, Goal Indicators, Curricular Objectives, and Instructional Objectives-- illustrate the goal refinement process. However, the number of steps a district may choose to pursue will vary depending on the nature of each goal and the degree of specificity which is viewed as necessary and desirable by those involved in planning instruction.

Module One

THE GOAL REFINEMENT PROCESS

By the time you complete this module you should be able to demonstrate your understanding of the goal refinement process by:

- *diagnosing the probable causes of instructional planning problems that result from ignorance of the process;*
- *Describing how the characteristics and benefits of the process affect various elements of the instructional program-personnel, evaluation, objectives, etc.*

Introduction

In Module One you will be introduced to the process of refining educational goals into objectives that can serve as a basis for selecting curricula and planning for evaluation. You will learn about the process by actually arranging goal indicators and objectives so that they reflect goal refinement.

You will also be given a list of the benefits and uses of goals and objectives, which should suggest ways to avoid various educational problems.

The goal of Module One is to develop knowledge and understanding concerning the purposes, benefits, and characteristics of the goal refinement process as they relate to instructional planning.

By the time you complete this module you should be able to demonstrate your understanding of the goal refinement process by:

- *diagnosing the probable causes of instructional planning problems that result from ignorance of the process;*
- *describing how the characteristics and benefits of the process affect various elements of the instructional program - personnel, evaluation, objectives, etc.*

We should perhaps warn you that you are about to be transported to a strange, mythical planet far away from your day-to-day environment. You will be simulating the role of interplanetary educational troubleshooters whose mission is to help outerspace beings organize their curricular planning. We have chosen the outerspace theme so that you might free yourself from your normal school routines and become thoroughly involved in the refinement process itself. To get the most out of this exercise, relax, let go, interact with your teammates and, most of all, enjoy it.

Bon Voyage!

Interplanetary Aid Program for Education Document: XX-245-68-2001

GOAL REFINEMENT UTILIZATION MANUAL OF PROCEDURES

(GRUMP 1)

Security Classification: FOR YOUR EYES ONLY

Distributed by: Educational Development Units for Curricular Operations, Review, and Planning Systems (EDUCORPS)

EDUCORPS Briefing

You are presently enroute to the planet Planit, a small celestial body in the recently discovered galaxy of Maffei 2. Your group forms an Educational Development Unit for Curricular Operations, Review, and Planning Systems (EDUCORPS). After debarkation on Planit, your group will be escorted to Minitech, the Planitian Ministry of Education. There you will begin immediately to aid Planitian Educational Technologists in the organization of their educational objectives so that they may make productive decisions about curriculum revision in their educational system.

Orientation: The Economy

When encountering the Planitians you may be surprised by the similarities between their civilization and some Earth-bound cultures. Planitian tastes are simple. The general population is industrious and semi-literate. The majority of the people work for the Planitian Industrial Group which regulates the growing, marketing, and consumption of Planit's chief agricultural product, the persimmon. This unlikely staple crop is necessary for maintaining the lives of the populace; without it the Planitians would die.

The average Planitian must consume at least four persimmons per day for life, and to insure this minimum consumption the ruling dynasty has for 500 years administered a rationing system to keep the economy and the Planitian life processes balanced. This system, known by all as the Planitian Persimmon Balance System (PPBS), requires that those working for the Industrial Group consume no more than the minimum daily requirement. By contrast, the ruling class is not limited in its consumption. Although the rulers have practiced frugality, in lean years the workers have been dissatisfied.

Orientation: The Social Structure

The Planitian ruling class is determined by heredity. Unlike those in the working class, they are cosmopolitan, literate, and wealthy, their riches coming from ownership of persimmon plantations. They can be easily distinguished from the working class by their light purple color; the workers are burnt orange from exposure to the sun.

Until recently the material differences between these two social classes have been mutually balanced. The workers have been satisfied with a healthy, undemanding life after compulsory schooling ends at grade twelve. During these formative years the adequacy of their diet has been controlled by the Planitian government to include four persimmons per day, a sufficient amount for physical and mental growth until compulsory education is completed. After that, mental growth ceases as adult learning would require an illegal increase in the *per diem* persimmon ration.

The rulers, by contrast, have been content to assume the responsibilities and accept the demanding life of hard-working plantation owners, administrators, and governors. They retain their privileged position by consuming more persimmons per day than their working class counterparts.

This is accepted by all, is allowed by PPBS, and is encouraged by society as it allows continued intellectual growth beyond childhood. Working class Planitians, then, are concerned with a good material life and the ruling class Planitians desire the satisfaction of preserving a well-ordered and prosperous society, and life-long intellectual stimulation.

Crisis

This comparatively happy social order has recently been threatened by impending tragedy. The six moons that surround Planit, traditionally the basis for the Planitian religion as well as the most popular spectator sport, have positioned themselves in such a way that the amount of sunlight reaching the planet has been decreased by 33 1/3%. This condition, prophesied incidently by Otalp, the ancient Planitian philosopher, has lasted for over five years and shows no promise of ending. The most disastrous result is that the main food supply, the persimmon crop, will not fully ripen. Because the ruling class and the present monarch, King Nalp, did not consider historical predictions to be relevant to the times, no planning for the crisis was attempted until two years ago when the Nalpian Court requested in desperation that an EDUCORPS be sent to Planit. At the same time the evils of malnutrition were taking their toll on the Planitians. Their six flexible arms and hands, the primary tools of the agricultural trade, began to shorten and atrophy, partly for nutritional reasons, partly from disuse. Their nine respiratory orifices, much like earthling noses, began to clog, grow smaller, and finally some ceased functioning altogether. Most seriously, Planitians began to consume unripe persimmons to avoid starvation and mental collapse. As a result their mouths have puckered so much that vocal communication is impossible. Speech has degenerated to soft, nasal, mewing sounds, interspersed with wheezes and grunts.

The ruling class, though profoundly inconvenienced, has been able to conduct the business of the planet efficiently since it is able to communicate through written messages. The working class, however, is at a loss. The average worker depends on vocal communication in nearly every phase of his life and the most serious aspect of this crisis is that the workers' twelve-year educational system, administered via a traditional lecture-oral feedback method, is paralyzed. This type of instruction is now obviously infeasible and, though teachers and the Planitian Minister of Education, Volvap, have been doing their best to compensate, Planitian children are graduating with inadequate skills to function as workers within the PPBS.

The economy has reached an unprecendented low. The GNPP (Gross Nalpian Persimmon Production) has reached bottom because: Planitians are planting persimmon trees upside down; productive trees are being prematurely uprooted; irrigation techniques are so poor that young saplings are being flooded; and some workers are smoking fertile persimmon seeds rather than planting them for future yield. All of these difficulties could be remedied through adequate educational preparation.

When the first EDUCORPS visited Planit, it assisted King Nalp in setting forth the top priority goal for the planet's educational future. The goal statement was immediately inscribed in gold leaf upon all the temples and schools of the kingdom, but after EDUCORPS departed the goal remained static.

To make matters worse, its supportive educational objectives were forgotten or became confused. Thereafter, Planitian action was limited to monthly ceremonial homage paid the goal by school board members.

The King then decreed that his Educational Technologists should draft lists of specific objectives by which to guide each phase of education. The result was a confused series of objectives ranging from the periodic imbibing of donrep, the Planitian liquor, to mewing "tnup" when the going got tough.

The situation has become very serious. Mobs of Planitian workers have taken to assaulting public officials, burning branches of the royal bank, and staging demonstrations under the aegis "all persimmons to the people." In response to this, King Nalp contacted our Central Office and requested another EDUCORPS.

Your job will be much easier than that of the previous Unit. Immediately you will set about unscrambling existing educational objectives, and placing them in a logical progression so that they provide an adequate guideline for practical curricular decision making. Further instructions follow.

MEMORANDUM

Date 2/29/03

To: EDUCORPS Volunteers

From: EDUCORPS Undersecretary for Research and Peptalks

Subject: Sample Goal Refinement Letter

The following is an example of the types of letters being transmitted to planetary rulers before the arrival of EDUCORPS teams. A similar letter has been forwarded to King Nalp:

King Pert
High Ruler
Planet Noplan

EDUCORPS members will soon meet with your curriculum committee to help devise objectives for your schools. They will be using what we call the "goal refinement process."

Goal refinement is simply the process of breaking down very general, long-range, educational aspirations into increasingly specific statements of intended student outcomes.

Goal statements provide direction. They describe highly desirable, often ideal, conditions that schools hope at least to foster, if not achieve. But they are usually too general to provide much guidance for curricular decision making. They must be refined into more precise objectives that can then serve to suggest specific courses of action for achieving the desired ends.

Objectives differ from goals in that they refer to a more limited time span (such as a year, or a semester), and they are more specific as to the types of behaviors expected and the curricular areas in which the behaviors are to occur.

In recent communications you said that you wanted all your students to become happy, contented members of their community. This may well become one of your educational goals. It gives an idea of what you aim to achieve, but it is much too general for making appropriate curricular selections.

Let's suppose you decide that "being able to get along with their fellow beings" would indicate to you that students had attained your goal of being happy, contented members of their community. "Appreciating the importance

---

Our motto:

"It is better to have refined a little than not to have refined at all."

of their work" would be another indicator. "Developing a desire to participate in self-rewarding recreational activities" may be yet another. Such statements represent refinements of your goal. We call them "goal indicators." You could also call them "sub-goals," "general objectives," or by another convenient title. The important point is that they are interpretations of the goal. They represent a more detailed explanation of the kinds of behaviors one would expect to observe in the lives of those who successfully achieve the goal.

Goal indicators are more specific than goals, but they are still long-range, life-related statements. Each goal indicator would need further refinement. For instance, "getting along with their fellow beings" might be refined to:

- Students will be able to function as leaders or as followers as appropriate.
- Students will be able to work cooperatively as a team to achieve a common objective.
- Students will develop all skills necessary for communicating with their fellow beings.

The above statements represent another level of refinement. You might wish to call them "curricular objectives," "sub-indicators," "program objectives" or whatever.

These objectives would have to be refined even further, to the point where they provide guidance as to the time span and curricular areas of the behaviors, before they would be adequate for selecting a curriculum appropriate to your goal. However, there is no set number of refinement levels. It depends mainly on the needs of those making the curricular decisions.

Goals should be refined only as much as is necessary to obtain an adequate guideline for curricular decision making. One should avoid becoming too specific. Undue passion for specificity might prove very limiting when selecting alternate actions during the curricular planning stage.

The goal refinement process is not something one should do once every decade. It is a continual process. New problems will arise. Your society and the needs of your students will change. Your goal may become outmoded or irrelevant. Experience may prove that your objectives are unattainable or that better objectives can be found. You must constantly be aware of the necessity to reevaluate, revise, and change your goals and objectives whenever they do not reflect the needs of your society and your learners.

Our EDUCORPS team is looking forward to meeting you and working with your educational leaders.

Sincerely,

Cistem A. Proach
EDUCORPS Undersecretary

EDUCORPS Procedures

- Form into teams of from three to five participants.

- Your team has been requested to assist King Nalp and the Planitian Educational Technologists (PETS) with their educational objectives. They have already decided upon a priority goal and have devised many objectives. But they have done so in a rather disorganized fashion. Your task is to organize the objectives using the goal refinement process. You are expected to present King Nalp a set of objectives that will provide a guideline for selecting curricula to satisfy his goal.

The top-priority Planitian educational goal is:

> SINCE ALL BEINGS ON PLANIT DEPEND ON THE AVAILABILITY OF PERSIMMONS FOR THEIR VERY SURVIVAL, IT IS IMPERATIVE THAT THE PUBLIC SCHOOLS TRAIN ALL STUDENTS IN THE NECESSARY UNDERSTANDINGS, ABILITIES, AND ATTITUDES FOR THE PRODUCTION AND RATIONING OF PERSIMMONS.

- The goal statement and the Planitian educational objectives will be given to you on cards. Place the goal statement on the table for reference.

- Next, sort through the objective cards picking out the most general of the objectives (the indicators). Place them in a horizontal line under the goal statement.

- Locate all objectives that appear to be refinements of the indicators. Line them up under the indicator to which they relate.

- ELIMINATE ALL OBJECTIVES THAT DO NOT RELATE TO THE GOAL.

  For example: Students will be able to demonstrate the ways in which contemporary art is influenced by the earlier Persimmonist movement.

  does not relate to the goal of obtaining necessary understandings, abilities, and attitudes for the production and rationing of persimmons.

- ELIMINATE ALL OBJECTIVES THAT ARE UNREALISTIC.

  For example: Students will demonstrate their acceptance of the PPBS by smiling each time they receive their daily allotment of persimmons.

  is unrealistic. The Planitians are unable to smile because their mouths are all puckered up.

- ELIMINATE ALL OBJECTIVES THAT ARE OVERLY SPECIFIC FOR THE PURPOSE OF MAKING CURRICULAR SELECTIONS.

  For example: Students will be able to mix six thimbles of persimmon juice with four cups of instant crater dust to prepare precisely two dozen persimmud pastries.

  is unnecessarily specific for selecting curricula.

- Place all eliminated objectives in a separate pile and save them, as well as your completed chart, to compare with the GRUMP 1 suggested responses.

Suggested Responses: GRUMP 1

The following arrangement of goal indicators and objectives represents only one of many possible alternatives. It is not intended to be definitive. Your team's arrangement, even if different, may be as appropriate. The order of ranking of the three Goal Indicators and their Curricular Objectives is for convenience rather than an indication of priorities.

Note the differences between your team's and the suggested arrangements and discuss them with your team and the training unit coordinator.

Planitian Educational Objectives

GOAL: Since all beings on Planit depend on the availability of persimmons for their very survival, it is imperative that the public schools train all students in the necessary understandings, abilities, and attitudes for the production and rationing of persimmons.

GOAL INDICATOR I: Students will acquire an understanding and appreciation of the Planitian Persimmon Balance System (PPBS) so that they will accept the system and comply with its regulations.

Curricular Objectives:

Students will be able to perform accurately those computational skills required of all working class Planitians by the PPBS, e.g., will be able to count from one to four persimmons without error.

Students will be able to demonstrate, through pantomime, why the PPBS was initiated and what would have happened had the PPBS not been implemented.

Students will illustrate, through pantomime or drawings, what would happen to Planitians should they refuse to abide by the rationing restrictions.

Students will be willing to comply with the PPBS rationing restrictions, eating only four persimmons daily.

GOAL INDICATOR II: All students will be able to perform properly all the agricultural skills necessary for planting, cultivating, and harvesting persimmon trees.

Curricular Objectives:

Students will be able to collect persimmon seeds and perform all the steps necessary for growing and planting persimmon seedlings.

Students will be able to determine whether rows of persimmon trees are receiving adequate amounts of water; and, using the appropriate tools and equipment, will be able to construct durable irrigation canals so as to properly distribute water to the trees when necessary.

Students will be able to determine whether persimmon trees are receiving adequate amounts of fertilizer; and, using appropriate tools and crater-dust soil replenishers, will be able to cultivate and fertilize the soil around those trees that need it.

Students will be able to identify, locate, and carefully remove by hand all insects, such as the planitworm, simmonpillar, and permite, that prove harmful to the growth of persimmons.

GOAL INDICATOR III: Students will have the understandings and abilities to develop and maintain the necessary state of health and physical fitness to perform the activities required of agricultural workers.

Curricular Objectives:

Students will be able to select from a variety of available foods those combinations that provide at least the daily minimum nutritional requirements, and will be able to prepare those foods so that no nutritional values are lost in the culinary process. (Their daily diets must include four persimmons.)

Students will develop the proper coordination, balance, poise, flexibility, endurance, and muscular strength required of all Planitian agricultural workers.

Students will be able to perform, when appropriate, all exercise/dietary procedures for the maintenance of proper weight levels.

Students will be able to perform all actions necessary to increase the stretchability of their arms so as to increase their efficiency as persimmon pickers.

Discarded Objectives:	Reason:
Students will be able to recite, with no hesitation, the first and last names and middle initials of the four interplanetary specialists who devised the persimmon rationing system (PPBS) 500 years ago.	Unrealistic (students unable to recite) Too specific for purpose Unrelated to goal
Students will appreciate the contribution arithmetic has made to PPBS.	Unrelated to goal
Students will be able to lead and participate in the traditional persimmon distribution relay called "One Persimmon, Two Persimmon, Three Persimmon, Four."	Too specific for purpose
Students will be able to describe the five distinguishing physical characteristics of the simmonpillar, the planitworm, and the permite, in exactly 10 minutes with no errors.	Unrealistic (students unable to describe) Too specific for purpose
Students will develop the habit of bowing six times to the left and seven and one-half times to the right while singing "Lala Save the Persimmon," and "The Nalpian Chant" before each working day.	Unrelated to goal Too specific for purpose Unrealistic (students unable to sing)
Students will be able to recite all 59 valuable nutrients contained in the persimmon in five minutes with no errors.	Unrealistic (students unable to recite) Too specific for purpose
Students will be able to prepare the following recipes invented by King Nalp: Persimmon Parmesan, Persimmon Persnickity, Puree de Persimmon, and Persimmon Porridge Hot, Persimmon Porridge Cold.	Too specific for purpose
Students will be able to roll over, bark, and shake hands when in the presence of the King or the King's officials.	Unrelated to goal
Students will be able to perform all traditional Persimmas Day dances.	Unrelated to goal

Discarded Objectives:	Reasons:
Students will be able to demonstrate through pantomime or drawings the importance of Planit's role in the Interplanetary Organization for Peace.	Unrelated to goal
Twenty-five percent of the graduates will have developed their vocal chords to the point where they are eligible to sing in King Nalp's chorale.	Unrelated to goal
Students will be able to determine whether a persimmon is ripe and will harvest only ripe fruits.	Unrealistic (lunar positions prevent fruit from ripening)
Students will be able to demonstrate their ability to increase working efficiency and endurance by using all nine of their respiratory pores individually, in combination, or simultaneously in accordance with the circumstances in which they find themselves.	Unrealistic (respiratory orifices clogging, shrinking, and ceasing functioning)

Interplanetary Aid Program for Education Document: YY-425-68-2001

GOAL REFINEMENT UTILIZATION MANUAL OF PROCEDURES

(GRUMP 2)

Security Classification: FOR YOUR EYES ONLY

Distributed by: Educational Development Units for Curricular Operations, Review, and Planning Systems (EDUCORPS)

Part I

Introduction

(In this part of the module you will assume the role of the Director of EDUCORPS. GRUMP 2 contains a letter from Volvap, Planitian Minister of Education. He describes some events that have taken place over the past two years and asks for your suggestions as to the reasons for the problems.

You will be provided response sheets to answer Volvap's letter and additional information on the goal refinement process, its purposes and benefits to use when writing your response.)

MEMORANDUM

Date 3/10/03

To: Director of EDUCORPS

From: Volvap, Planitian Minister of Education

Subject: Progress Report on Planitian Persimmon Balance System

Greetings on behalf of myself and the people of Planit. It has been two years since your most able volunteers assisted us in our crisis and I am pleased to announce that the persimmon problem no longer persists. Our Planitian Persimmon Balance System is again functioning well.

Unfortunately, other perplexing educational problems have come to my attention. I would like to relate some of these to you and ask for your suggestions as to how we should have dealt with such problems.

Science Academy of Planit

Our Science Academy is still totally separated from the Academy of Agricultural Kinetics, where your people did such a magnificent job. Unfortunately, there is no direct communication between the two institutions. Dr. Tim Teaching, head of SAP, heard about the progress at AAK and decided that his academy needed a similar boost. He was receiving considerable student pressure to broaden the scope of the curriculum to include more socially relevant areas of study, so it seemed like a fruitful time to devise a system of objectives for his Academy.

Equipped with nothing more than a general familiarity with the writing of objectives, he began specifying all the objectives he could think of. Before exhaustion caught up with him he had managed to list 654 objectives.

Rumblings of dissent began shortly after Teaching's list had been released. The alchemists found that there were only 44 objectives relating to the social relevance of alchemy while the astrologers managed to top the list with 156 objectives. The alchemists, believing this was proof of a bias

in the list, vowed to fight its implementation until such inequities were remedied.

Others complained that there was insufficient time to teach all the objectives listed. When department heads chose only those objectives they felt like promoting, other staff members found that most of their curricular plans were no longer appropriate.

Many students were unhappy because the list missed the essence of what they felt was important. They became lethargic until one of the enterprising student leaders realized that several of the objectives called for field studies. The students enlisted the help of a sympathetic metaphysician to organize field trips to the local geyser area to view some "socially relevant aspects of the low viscosity of mud holes for recreational purposes." Unfortunately (or perhaps fortunately), during one of the field trips, the students were observed by various parents. Seeing the students wallowing in the mud and wandering aimlessly around the area was too much for them. It had been difficult to placate the parents with some of the recent changes of the Academy. (The parents felt that the Academy should still teach students to memorize the phases of six moons and the times of the eclipses of the planets. The lack of required memorization made it much more difficult for the children to be shown off in customary fashion at the Revered Regurgitation Ritual.) Information and misinformation about the gevser trip soon spread around the community. A contigent of enraged parents soon descended upon Dr. Teaching at the SAP head office.

There seems to be no way to get all of these now warring groups to come to terms with each other. Can you help us to understand what went wrong and to determine what we can do to institute needed changes more amicably at SAP?

Gratefully yours,

Volvap

Procedures

You have read Volvap's request for advice and brief statements describing the events that have led to problems in one of his schools. However different the environment might be on Planit, the problems incurred may seem familiar to you.

Your task as Director of EDUCORPS is as follows:

- Identify the major errors committed by the principal.
- Identify the benefit(s) of goal refinement that were apparently unknown or ignored by the principal.

Both of these tasks are to be accomplished on the EDUCORPS Response Form. Before attempting the task, however, please study the following information about the goal refinement process and the many benefits of using goals and objectives.

THE GOAL REFINEMENT PROCESS

Goals are broad, general statements of long-range educational aspirations. They are useful for certain purposes, but goals alone do not provide adequate direction for making decisions concerning learning environment, curriculum selection, evaluation planning, and program effectiveness. They are too vague, too long-range, too general. They need to be restated in much more precise terms. They need to be refined.

The goal refinement process is a technique for obtaining more precise guidelines for making curricular and evaluation planning decisions. Starting with broad goals, one begins to devise goal indicators and the related objectives that refer to a more limited time span. These are more specific as to the types of behaviors expected and indicate the curricular areas in which the behaviors are to occur. Each step in the process should logically follow the more general, preceding stage. Each step should increasingly suggest specific actions which can be taken.

Judgment and consideration of the basic values sought by the district are required at each step of the goal refinement process. Goal refinement is not a mechanical procedure, nor is it a substitute for experience and good judgment.

The successive refinement process should be continued until one has obtained objectives that are sufficiently clear to provide direction to those who must use them for taking action. There is no set number of steps in the process arriving at a "sufficiency level," for a goal may require one, two, three, or more steps.

The number of steps will depend on:

- The nature of the goal. For example, a goal relating to development of motor skills may require extensive specification. On the other hand, refiners may not feel it necessary to be highly specific when dealing with goals related to self-concept.

- The philosophical stance of the refiner. Beliefs concerning the nature and purposes of education and the kinds of circumstances in which optimal learning occurs may in part determine the degree of specificity sought during the goal refinement process. This is reflected in various objections of some educators to highly specified objectives. Some feel that highly specified objectives may cause teachers to overlook or even to frustrate unpredicted outcomes that are desirable. Others feel that an overemphasis on lower-level cognitive functioning, even on trivial outcomes, is caused by "overspecification." Still others object on the premise that objectives should emerge while actually working with students.

Goal refinement should be regarded as a continuous process which involves staff, community, and students; which continues until a practical or useful level is attained; and in which the resulting objectives are always subject to appraisal and revision. Under these conditions, objections can be more easily handled.

Benefits of the Goal Refinement Process

The Benefits of Starting from Goals

Developing Objectives 1. Goals provide a *focus for developing objectives*, which serve as the basic aid in determining the behaviors that show attainment of the goals. Breaking down goals into objectives also provides a useful selective screen for choosing further, more refined, objectives.

Determining Priority 2. Goals provide a *focus for determining priority* among competing problems, clarifying where the application of the district's limited resources is most warranted.

Growth and Change 3. Goals provide a *focus for the initiation of growth, change, and renewal* of the school system by *basing* program decisions *upon* an *agreed direction* for growth and change.

Communication Concerning Purposes 4. Goals provide a *focus for stimulating communication and interaction concerning purposes*, within the school system and with the community, which lead to the design of programs that reflect community needs and desires.

The Benefits of Deriving Objectives from Goals

To Improve Learning

Learning Environments 5. Objectives provide *direction for selecting or designing* the most conducive *learning environments* by first determining the desired outcomes in terms of student knowledge, attitudes, and skills.

Appropriate Programs 6. Objectives provide *direction for selecting the most appropriate* among alternative *curricular programs*, eliminating wasteful trial and error in adoption of curricula.

Educational Philosophies 7. Objectives promote *consideration of educational philosophies* so that differences can be carefully examined and consensual agreement reached before final selection or development of programs.

Refinement 8. Objectives promote the framework for *continuing the process of refinement* to more specific levels, while aiding planners to agree on the most appropriate level for the desired purposes.

To Improve Learning

Importance of Outcomes

9. Objectives promote *communication* among planners, other staff, parents, and students, *about the relevance and importance of intended outcomes*, by reducing general goals to specific skills or competencies that they can discuss.

Development

10. Objectives *provide* teachers and students with *information for the development of learning experiences*. Clearly delineated objectives should also *permit continuous appraisal and revision*.

To Improve Evaluation

Evaluation Procedures

11. Objectives provide direction for *establishing procedures* and determining the effectiveness of the curriculum or of specific learning strategies employed within it; and, in turn, for *validating* the long-range *effectiveness* of the educational program.

Outcome Reporting

12. Objectives permit the *development of improved procedures for reporting* program outcomes to students and parents, by promoting reliance upon objective-based evaluation rather than non-objective appraisal of the degree of attainment of a student or group.

Measurement Tools

13. Objectives provide guidance for *developing measurement tools* for assessment of learner outcomes, permitting schools to make accurate judgments concerning where and what changes are needed.

Assessing Problem Areas

14. Objectives provide a basis for *assessing problem areas*, allowing evaluators to determine objectively the size and seriousness of a problem, and the discrepancy between existing states and desired states of learning development.

To Improve Management

Resources

15. Objectives provide direction for *determining resource requirements* (personnel, materials, time, space) for curricular programs.

Responsibility

16. Objectives provide a basis for the *assignment of responsibility and accountability* among the staff, and promote awareness of the types of responsibilities for which their work will be evaluated.

FORMS CONTROL 000-XXX-2003

EDUCORPS Response Form

Procedures:

1. Remove the pages in which Volvap describes the scene at Science Academy of Planit (pp. 19-20).

2. List the apparent errors made by the principal in the space below. Remember you are acting as a consultant. Your list should be such that its reader would benefit.

3. Using the list of benefits of the goal refinement process (remove if you wish) select the numbers that would most appropriately illustrate how each error might have been avoided had the goal refinement process been applied. Record the numbers of the benefit(s) in the right hand column below.

4. When you have finished, proceed to the next page and compare your work with the feedback.

SCIENCE ACADEMY OF PLANIT

Errors	Benefit Number(s)

Suggested Responses

EDUCORPS Response Form

Please check your analysis of the SAP's problems with the chart below. The list and the accompanying numbers are representative. They are not necessarily exhaustive and your choices, if different, may be equally valid. If you have a question or major disagreement, please inform the coordinator.

SCIENCE ACADEMY OF PLANIT

Errors	Benefit Number(s)
1. There was no evidence that objectives were derived from Science Academy goals or even that there were goals.	1
2. The principal initiated a curricular project without using goals as a focus upon which to base change.	3
3. There is no evidence that 654 objectives were needed. A framework for the process of refinement is needed	8
4. The principal was the sole source of the goal refinement process; no involvement of staff, students, nor parents. Staff was upset over the lack of relationship between the objectives chosen and the existing curricular programs. Parents-students were either upset or confused.	4, 9, 10

Below are two additional descriptions of Plantian schools in difficulty. Please proceed as follows:

- Read through the descriptions.
- Using the list of benefits, analyze the Planitian schools for apparent errors.
- List the errors and the appropriate benefit number(s) in the response form that follows.
- Upon completion, compare your work with the suggested responses that follow.

Persimmon Peak General School

Miss Ima Pertchart, the new principal of Persimmon Peak General School, feels that the school's rather traditional pedagogical approaches could stand a few embellishments. She was visited by an interplanetary educational salesman and became very enthusiastic about the company's leading educational program. This program was designed to motivate and involve students through the use of learning games.

Miss Pertchart received financial assistance through a subtitle grant from the Galactic Activities Fund to purchase a number of these games for the school. The children were immediately enthusiastic, but the teachers were dismayed over the increased noise and commotion when the games were in use. They complained that they were losing control over their classes.

The GAF subtitle grant requires that there be an evaluation of the program after an appropriate period of time. It is clear that the children genuinely enjoy the games, participate enthusiastically, and want the program continued. However, it seems impossible to figure out what they are learning. Miss Pertchart is wondering whether the new program was worth the trouble.

The inability to document student learning progress, combined with a number of complaints from teachers, parents, and custodians, seems sure to doom this type of experimentation unless a different approach is devised. What are your suggestions?

General Academy of Planit

A certain amount of dissension has also been detected at the General Academy of Planit. In an attempt to establish accountability, Principal B. D. Fined insisted that all teachers evaluate their programs. His directive stated that the evaluation should be in terms of student learning, but he left the design particulars up to the teachers. Unfortunately, the teachers complained that they did not know what or how to evaluate. Many listed reasons why their programs were not even amenable to evaluation. They argued that every teacher has his own particular method of teaching and every student has a different way of learning. Therefore, a wide variety of learning experiences was being implemented in each class and it would be impossible to evaluate all the learning outcomes of the programs.

The teachers also stated that a number of programs were in an experimental stage; no one was clear what their final forms would be and it would be absurd to evaluate them at this stage. They also complained that there were insufficient materials and equipment to support the programs. Therefore they felt it would be unfair to evaluate the programs until the situation was remedied.

All evaluation attempts thus far have failed. Perhaps these criticisms are justified and we should not press the issue. What are your suggestions?

PERSIMMON PEAK GENERAL SCHOOL

Errors	Benefit Number(s)

GENERAL ACADEMY OF PLANIT

Errors	Benefit Number(s)

SUGGESTED RESPONSES

PERSIMMON PEAK GENERAL SCHOOL

Errors	Benefit Number(s)
1. An innovation was selected without attention to determining the type of learning environment preferred by staff. The impact on staff and students should be considered first. Objectives provide direction for designing learning environment.	5, 7, 9
2. The principal engaged in experimentation without giving attention to hoped for student learning.	6
3. No evidence of planning for evaluation. Either the school did not know what to evaluate or the program did not lend itself to evaluation.	11, 13, 14
4. Staff was not involved in selection of curricular materials.	9

GENERAL ACADEMY OF PLANIT

Errors	Benefit Number(s)
1. The principal insisted on evaluation without prior planning or having the necessary tools.	11, 13
2. The teachers' descriptions of the wide variety of methods, learning experiences, and outcomes suggests that the staff may not know about or at least agree on basic objectives of the school program.	5, 10
3. Experimental programs should be based on some notion of their purpose and thus provide the capability of being evaluated.	6
4. Inadequate materials and equipment contribute to a condition that can be recognized and considered prior to implementation.	15, 16

Self-Test

This Self-Test is a way of assuring that you understand what the goal refinement process is and what it is not.

After completing Park I, examining the Suggested Responses, and having the discussion, complete Part II.

Part I

The statements below describe some aspects of the goal refinement process. Some of them are generally true of it and others are partly inaccurate or misleading. Place a (T) beside the statement you feel is generally true. Place an (M) beside each misleading statement.

For those that you believe to be misleading, explain why in the spaces provided. When you have answered the questions, examine the Suggested Responses. The coordinator will lead a final brief discussion on this module.

The goal refinement process:

____1. Involves the refinement of goals into objectives to the point where they are useful for making curricular decisions.

_____

_____

_____

_____

_____

____2. Should be accomplished by the professional staff.

_____

_____

_____

_____

_____

_____

___3. Is a way of insuring proper answers to educational problems.

___ 4. Provides direction for selecting and/or designing learning experien

___5. Is a linear, one-time process.

___6. Is useful for coordinating the efforts of many individuals who must play a role in selecting curriculum.

___7. Results in a complete listing of possible student behaviors.

___8. Is useful in promoting communication among staff and clients about relevance and feasibility of instructional objectives.

___ 9. Helps to provide the means for measuring accountability of schools to the community.

___10. Eliminates value choices.

___11. Requires a specified number of small, discrete steps from goals to usable objectives.

___12. Provides a basis upon which evaluation of selected instructional programs can be planned.

Self-Test Suggested Responses

Part I

1. T

2. Misleading because although professional staff should direct the process, all persons--or representatives of large groups--who are concerned with the school should be involved.

3. Misleading because the process is only an aid, not an insurance. Proper answers depend on the quality of decisions at each step of the process.

4. T

5. Misleading because the process requires continuous evaluation and modification of goals and objectives based on experiences, new input, and reactions from involved persons. Feedback and rethinking are essential ingredients of the goal refinement process.

6. T

7. Misleading: the process provides at best a sample of possible student learnings which suggest that the goals are being met.

8. T

9. T

10. Misleading because the process requires value choices at every decision point. The process provides a framework in which to evaluate and make practical decisions.

11. Misleading: the number of steps will vary among goals and will depend primarily on the specification level that refiners want and the nature of the goal.

12. T

Part II

Below is a narrative description of a "planned" instruction episode. Numerous problems developed as a result of the principal's action. Following the narrative is a listing of excerpts taken from the description. Each excerpt may be viewed as a system of neglect concerning a well-executed goal refinement process.* Your task will be to write a brief diagnosis concerning a specific benefit or characteristic of the goal refinement process that might have prevented her problems. First read the narrative description, then follow the instructions provided.

> The Earth Day Program at East College had been truly exciting and as she headed home Miss Ann Thrope began wondering what she could do for Echo Elementary School. Since no other staff member had attended, it was up to her alone, as principal, to ensure that the message she had learned at the program was not lost. She was so immersed in thought while returning to school that she took a wrong turn and found herself in an old wood lot not far from school.
>
> It suddenly occurred to her that this would be a perfect place for a study area. Calling forth the lecture she had just heard as well as her high school biology, she began by listing all the possible behavioral objectives that seemed to spring from the natural setting (she had recently completed a course setting forth the benefits of detailed behavioral objectives).
>
> When her list reached 350 highly specific behavioral objectives, she felt that this would surely serve as a sufficient guide for her teachers. That weekend she mimeographed the list and wrote a "subtle" suggestion that all teachers take part in a one day field trip to fulfill the education code requirements (which she had just learned existed from the Earth Day lecture).
>
> Harboring some resentment because of other important lesson plans, but recognizing the "suggestion" for what it was, all the teachers took their classes to the wood lot on the first sunny day. The air was soon filled with

*Goal Refinement is the process of breaking down very general, long-range, educational aspirations into increasingly specific statements of intended student outcomes.

the crunching of eager feet and the shouts to get into line. By noon, all the natural creatures had either long since fled or had been well trampled. The children were then returned to school to spend the afternoon writing about their experiences.

Two days later, Miss Thrope was greeted by a small, but very angry, group of parents. From the heated discussion Miss Thrope quickly learned that many of the children had developed reactions from poison oak, a few had told their parents about their "morning off," two children had actually strayed home during the morning, three mothers were upset over the lack of supervision afforded their children while wandering around in the woods, and the owner of the property adjacent to the wood lot complained that his camelia bushes had been trampled. It was obvious to Miss Thrope that the parents had misunderstood the purpose of the excursion. To make matters worse, she discovered that she was incapable of clearly explaining her purpose to the angry parents.

Somewhat shaken by her experience, Miss Thrope hurriedly began preparing an explanation of the trip for the Superintendent. She felt that a very positive evaluation would probably vindicate her. An urgent plea was thus put to all the teachers who had participated for an evaluation of the field trip.

While diplomatically positive, the teachers' written evaluations gave little of substance to justify the event. Further, the written evaluations were extremely difficult to analyze and report. In fact, it was difficult to ascertain that the teachers had actually been to the same place or had participated in the same activity. A check of the students was even less productive, as they generally viewed the field trip as a long recess.

Miss Thrope wondered where she had erred. What should she have done to prevent all of the problems from developing?

Read the list of excerpts (symptoms of neglect) below. Beside each, write a brief diagnosis concerning at least one benefit or characteristic of the Goal Refinement Process that might have prevented her problems. An example is provided to help you get started.

Example

Excerpt	Diagnosis
"Since no other staff member had attended, it was up to her alone...to ensure that the message...was not lost."	*She proceeded on her own, thus ignoring the benefits that accrue through staff participation.*

Excerpt	Diagnosis
1. "...she began by listing all the possible behavioral objectives that seemed to spring from the natural setting."	
2. "When her list reached 350 highly specific behavioral objectives, she felt that this would surely serve as a sufficient guide for her teachers."	

Excerpts	Diagnosis
3. "...she mimeographed the list and wrote a 'subtle' suggestion that all teachers take part...".	
4. "...shouts to get into line." "...a few had told their parents about their morning off." "...two children had actually strayed home...".	
5. "...the parents had misunderstood the purpose of the excursion." "...she was incapable of clearly explaining her purpose to the angry parents." "...Miss Thrope hurriedly began preparing an explanation of the trip for the Superintendent."	

Excerpts	Diagnosis
6. "An urgent plea was thus put to all teachers for an evaluation of the field trip."	
7. "...the teachers' written evaluations gave little of substance to justify the event."	
8. "...it was difficult to ascertain that the teachers had... participated in the same activity."	

Part II

Suggested Responses

Excerpts	Diagnosis
1. "...she began by listing all the possible behavioral objectives that seemed to spring from the natural setting."	• *Objectives should be derived from goals, not the "natural setting."* • *A learning environment might promote the development of some objectives, but this is not the natural flow of events.* • *Trivial objectives might be the rule rather than the exception if the learning environment is the primary basis used.*
2. "When her list reached 350 highly specific behavioral objectives, she felt that this would surely serve as a sufficient guide for her teachers."	• *A list of objectives should serve as a guide. Exhaustive listing of objectives is impossible, and would be unnecessary were it possible.* • *The list should be manageable and representative.* • *Staff members should have participated in the process, particularly since they are responsible for facilitating attainment of objectives.*

Excerpts	Diagnosis
3. "...she mimeographed the list and wrote a 'subtle' suggestion that all teachers take part...".	• *Involvement of staff members at the planning stage helps ensure a commitment when their cooperation is required.*
4. "...shouts to get into line "...a few had told their parerts about their morning off." "...two children had actually strayed home...".	• *Students were not involved with planning the activity nor were they informed of the purpose.*
5. "...the parents had misunderstood the purpose of the excursion." "...she was incapable of clearly explaining her purpose to the angry parents." "...Miss Thrope hurriedly began preparing an explanation of the trip for the Superintendent."	• *Communication of purpose is a primary benefit of a process of obtaining objectives. All interested parties should have been informed.*

Excerpts	Diagnosis
6. "An urgent plea was thus put to all teachers for an evaluation of the field trip."	• *Urgency would not be necessary if procedures for evaluation had been established prior to implementation.* • *Awareness of goals and objectives by staff would help them plan evaluation.*
7. "...the teachers' written evaluations gave little of substance to justify the event."	• *Objectives (if communicated, understood, and agreed to) provide the basis for the development of measurement tools that will reliably assess learner outcomes and permit schools to make needed changes.*
8. "...it was difficult to ascertain that the teachers had... participated in the same activity."	• *Objectives provide teachers and students with common information for the design of learning experiences. Apparently, teachers were not aware of the intent nor the desired outcomes.*

Introduction

In Module One you became familiar with the process of refining goals into more specific, short-range objectives that provide better guidance for curricular decision making. You arranged the objective cards in the following descending order: goal, indicators, related curricular objectives. You will still be working with the same three levels of refinement in this module. This does not mean that three is a magic number. Some planners, for example, use several levels before reaching curricular objectives. They start with the goal, then indicators, policy objectives, program objectives, and then curricular objectives.

You have also become acquainted with the process of judging the adequacy of objectives by screening them through an established set of criteria (Unrelated to Goal, Unrealistic, Too Specific). In this module you will again determine the adequacy of curricular objectives by screening them through a different set of criteria:

Guidance

Relevance

Feasibility

You will be required to revise most of the inadequate objectives so that they meet these criteria.

Curricular objectives are still fairly general statements of intended student behavior. They are specific enough to provide guidance for selecting or developing curricula, but they are too general to be used by individual teachers in guiding and evaluating day-to-day classroom activities. Curricular objectives are generally devised at the district level and are used by curricular specialists, department heads, teachers, and others who are involved in planning curricular programs.

Module Two

SCREENING OBJECTIVES

By the time you have completed Module Two you should be able to:

1. List and define three criteria that are useful in determining the adequacy of curricular objectives, these being:
   - Guidance
   - Relevance
   - Feasibility
2. Judge whether curricular objectives meet all three of the above criteria, given proper information to make such judgments.
3. Explain why the curricular objectives you judge to be inadequate fail to meet one or more of the criteria listed above.

PROCEDURES

You will be working in teams to determine the adequacy of curricular objectives. After studying explanations of the three criteria, your team must read each objective and decide whether it provides guidance, is relevant, and is feasible. On the basis of these decisions the team must then accept the objective, or explain why the objective should be rejected or revised. A decision to reject is usually based on a determination that the objective is irrelevant and/or requires so much revision that starting over with a new objective would be easier.

- FORM INTO TEAMS OF FROM THREE TO FIVE PARTICIPANTS.
- READ THE FOLLOWING PAGES ON CRITERIA FOR SCREENING OBJECTIVES AND READ THE QUESTION GUIDELINES.
- READ THE INSTRUCTIONS.
- DO THE PRACTICE EXERCISE INDIVIDUALLY OR WITH YOUR TEAM.

Criteria for Screening Curricular Objectives

G U I D A N C E

Objectives must guide or provide direction to users. They must be clearly written at a level of specificity that is appropriate for their intended use.

Clarity is achieved if the writer's intent is plainly and uniformly understood by the users of the objectives. Increased specificity is achieved as the focus proceeds from general goals to more specific levels relating to academic problem areas, to still more specific levels relating to curricular selection and classroom application. Increasing the specificity of an objective permits greater clarity. The absence of clarity at any one level may result in widely varying interpretations.

Question Guidelines

Use the following questions in determining whether objectives meet the Guidance criterion.

Does the objective clearly indicate the desired student behavior?

- Does the objective indicate what the student is to be able to do (e.g., recall, identify, solve, compare, interpret, invent) in such a way that misinterpretation by users is minimized?

Does the objective indicate the curricular area in which the behavior is to occur?

- Can planners assign responsibility and accountability for the objective to specialists within a curricular subject area, or to several if common responsibilities are apparent?

Can you measure the attainment of this objective?

Is the specification sufficient for selecting curricular materials and/or designing learning experiences that will contribute to the attainment of the objective?

RELEVANCE

A relevant objective is meaningful to the learner, related to the educational goal from which it is derived, and desirable in terms of the present and future expectations of the school and its related groups. To be relevant is not simply to embrace changing attitudes for the sake of change--it is to provide a responsive ear to new and divergent interests and be willing to formulate and revise objectives continually to meet the changing needs of the educational milieu. This calls for constant reassessment of learning assumptions as well as of the changing attitudes and needs of students, parents, scholars, other school-related groups, and the general public.

Question Guidelines

Use the following questions in determining whether objectives meet the Relevance criterion.

Does the objective satisfy the present and future needs of the learner?

- Does the objective specify a behavior that will be useful to the learner immediately and after he is no longer in school?
- Will attainment of the objective assist the student in becoming an effective person in his society and culture?
- Is it possible that attainment of the objective will have any ill-effects on the learner?

Will the achievement of the objective lead toward the attainment of the long-range goal from which the objective is derived?

- Does the objective relate to the goal from which it is derived?
- Will accomplishment of the objective assist the student in achieving the goal?

Does the objective reflect what students, parents, citizens, and educators consider to be a desirable educational aspiration?

- Is this an objective that students will consider important to them?
- Will parents and citizens in the school community react positively toward student attainment of this objective?
- Do educational specialists and subject matter experts generally agree that this is a worthwhile objective?
- Do teachers and other members of the school staff consider this a desirable objective?
- Will achievement of the objective have any ill-effects on the personalities of those involved, and on society as a whole?

F E A S I B I L I T Y

A feasible objective is one that has a good probability of being achieved. Planners need to prevent their projects from being mere guesswork by basing their decisions on data from past experience. However, innovative suggestions should not be discounted simply because they have not been tried before. Previous student and staff performance records, evidence of reactions, the experiences of your own and other schools in attempting to achieve similar objectives, all should be considered when weighing innovative techniques and ideas to achieve a guided and vital learning process.

If the objective has a good probability of being achieved, it is important to consider how practical and realistic it is to work toward its accomplishment. Planners must appraise the potential benefits of the objective in light of physical and resource factors and possible consequences.

Question Guidelines

Use the following questions in determining whether objectives meet the Feasibility criterion.

Does the objective have a good probability of being achieved?

- Is the objective realistically consistent with student and staff abilities?
- Is enough known about the type of learning implied to ensure a chance of its accomplishment?
- Has successful attainment of this or similar objectives occurred in other schools?
- Have attempts to achieve this or similar objectives failed in other schools; and if so, why?

Is the achievement of this objective practical in view of organizational capacities, limits and constraints?

- Is the potential benefit of achieving the objective worth the foreseeable costs for personnel, material and resources?
- Does the potential benefit of achieving the objective justify the amount of time it would take?
- If the objective deviates from present practices, is it desirable in light of foreseeable consequences of change and reorganization within the institution?

Should the objective have foreseeable social impact; is it desirable in light of the possible consequences for the institution?

- Does the objective deviate from existing purposes of the institution? If so, is it desirable in terms of the amount and kind of reorganization that may have to be undertaken?

- Does the objective conflict with the values and beliefs of the community, students, staff, or special interest groups? If so, is it desirable in view of the strategies that may have to be implemented to meet and refute criticism?

Background Information

HORACE MANN UNIFIED SCHOOL DISTRICT

The following information should help you in determining the feasibility and relevance of the objectives of the hypothetical school district we are using in this module. You may not find the information as complete as you would like. However, in real life it is difficult to obtain all the data one would like for making accurate decisions. In many cases, decisions must be based on judgment and common sense.

READ THE GOAL STATEMENT AND INFORMATION BITS NOW AND REFER TO THEM WHEN NECESSARY DURING THE ACTIVITY.

The Goal Statement

You will be screening curricular objectives that relate to this educational goal:

> All schools in the Horace Mann Unified School District should work toward helping each child develop the power to think constructively and critically, to solve problems, to reason independently, and to accept responsibility for self-evaluation and continuing self-instruction.

This and other goals were developed by members of the community, the Board of Education, and representatives from the Horace Mann District staff. The goal was refined into eight goal indicators by the same committee.

District staff members devised many curricular objectives for each indicator. You will be working with a few samples of their curricular objectives. Remember, curricular objectives are further refinements of the goal and its indicators. They must relate to the goal and the indicators, and they should be more specific than either. They are not as long-range as the goal or the indicators (i.e., they contain some time constraint such as "by the end of the eighth grade," "by the end of the course"). They are more specific about intended student behavior and they indicate the curricular area in which the behavior is to occur.

Information Bits

1. The district has an average daily attendance of 16,250 students.
2. The mean intelligence of the school population is slightly above average.
3. The district is located in an inland state.
4. The district is working toward the implementation of a Program Planning and Budgeting System. At this time, however, there is no available data concerning actual cost by curricular program.
5. Segments of the student population of the district seek to improve and update course offerings.
6. The district Board of Trustees supports the concept of appropriate involvement of students in decision making.
7. Each school is equipped with a library that meets American Library Association standards.
8. There are some beginnings of community discord over financial costs of education.
9. Teachers in the district have been encouraged to allow their students greater initiative in planning their educational programs.
10. Teacher-student conferences are scheduled three times annually for the purpose of reaching an agreement over evaluation of student progress.
11. The school budget precludes new building programs, the purchase of expensive equipment, or extensive student field trips paid for by the district.
12. There are three high schools, five junior high schools, and eighteen elementary schools in the district.
13. Sixty percent of the high school graduates enter college.
14. Major sources of income for the community come form businesses, an automobile assembly plant, and a large research and development center.
15. There are two junior colleges and a private four-year liberal arts college in the area.

Instructions

By now you should be in a team of at least three participants. Starting with the practice exercise, you should begin screening the curricular objectives as follows:

1. Read each indicator and the curricular objective. (The indicators are stated in order to help determine the relevance of each objective. Screen ONLY the curricular objectives.)

2. Refer to the Question Guidelines and decide as a team whether each objective meets the three criteria.

3. Record your team's decisions on your own worksheets by checking the appropriate squares.

   NOTE: SOME OBJECTIVES MAY FAIL TO MEET MORE THAN ONE CRITERION. IN THIS CASE, MORE THAN ONE CRITERION SQUARE SHOULD BE CHECKED.

4. If your team decides that an objective meets all criteria, based upon the Goal Statement and Information Bits, check "Keep as is" and proceed to the next objective.

5. If your team decides that an objective is irrelevant and/or requires too much revision, check "Reject" and mark the squares representing the criteria the objective fails to meet.

6. In the space provided, explain in detail exactly why the team feels the objective fails to meet the criteria marked. (You should keep notes on your own forms for future reference.)

7. If you decide as a team that an objective is inadequate but can be revised, check "Revise" and mark the squares representing the criteria the objective fails to meet.

8. In the space provided, explain in detail exactly why the objective fails to meet the criteria marked. Your explanations should be written in such a way that a curricular objective writer could revise the objectives to meet the criteria. Remember, your team's efforts should communicate your team's intent.

   NOTE: MOST OF THE OBJECTIVES ARE REVISABLE. REVIEW ALL REJECTED OR ACCEPTED OBJECTIVES CAREFULLY.

9. Team discussion is encouraged.

10. When you have completed the eight worksheets, compare your team's judgments with the suggested responses that follow them. Please do not refer to the suggested responses before you have completed the set.

Practice Exercise

On the following page is a practice worksheet. Begin screening the sample curricular objective and filling out the form individually or with your team. When you have completed the practice worksheet, turn to the feedback on the next page to see if you did the exercise correctly. If you have any questions, ask your coordinator. When you and your teammates are sure you know how to perform the activity, turn to Worksheet #1 and begin.

Practice Exercise

INDICATOR: Students will become intellectually curious and demonstrate a desire and capability to learn independently.

SAMPLE CURRICULAR OBJECTIVE

By the end of the first four weeks of school, eighth grade students will be able to develop individual plans that specify learning objectives, estimated time for study, and kinds of evidence that will be used to indicate accomplishment of the objectives.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

Suggested Response

Practice Exercise

INDICATOR: Students will become intellectually curious and demonstrate a desire and capability to learn independently.

SAMPLE CURRICULAR OBJECTIVE

By the end of the first four weeks of school, eighth grade students will be able to develop individual plans that specify learning objectives, estimated time for study, and kinds of evidence that will be used to indicate accomplishment of the objectives.

☐ Keep as is

☒ Revise

- ☒ Insufficient guidance
- ☐ Irrelevant
- ☒ Infeasible

☐ Reject

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

Guidance: *It does not define the curricular area in which the behavior is to occur, and it could be more specific as to the time span of the individual plans.*

Feasibility: *It would probably be infeasible to expect students to develop such a plan after only four weeks of school. Furthermore, the assistance of teachers would probably be necessary for many students.*

SCREENING OBJECTIVES

WORKSHEETS

- Decide on the adequacy of the CURRICULAR OBJECTIVES.
- Mark your team's decision in the appropriate squares.
- If you decide the objective should be rejected or revised, clearly explain your reasoning on the space provided on the worksheet.

WORKSHEET #1

INDICATOR: Students will become skillful in locating reference materials, securing needed information, and evaluating the information for its accuracy and appropriateness.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be able to demonstrate proficiency in using a variety of reference sources (maps, encyclopedias, almanacs, card catalogs) to locate needed information for writing social studies reports.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #2

INDICATOR: Students will become skillful in locating reference materials, securing needed information, and evaluating the information for its accuracy and appropriateness.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will achieve an understanding of the Dewey decimal system so they can locate reference materials in a library.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #3

INDICATOR: Students will become intellectually curious and demonstrate a desire and capability to learn independently.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be willing to assume responsibility for student government activities and actively participate in student affairs, elections, etc.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #4

INDICATOR: Students will be able to analyze, interpret, and evaluate experimental results, observations, reading selections and other sources of information to arrive at generalizations and conclusions.

SAMPLE CURRICULAR OBJECTIVE

Given recently drawn conclusions concerning ecological imbalance, eighth grade students, by graduation, will be able to collect and analyze various ocean specimens in order to support or challenge the conclusions.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #5

INDICATOR: Students will be able to distinguish between relevant and irrelevant information and between statements of fact and value-laden opinions.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be able to distinguish relevant from irrelevant information when screening the school district's annual budgetary report for data that supports or challenges the cost effectiveness of the drug abuse program.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #6

INDICATOR: Students will become skillful in locating reference materials, securing needed information, and evaluating the information for its accuracy and appropriateness.

SAMPLE CURRICULAR OBJECTIVE

By graduation from eighth grade, students will be able to collect and evaluate information about problems felt to be appropriate.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #7

INDICATOR: Students will recognize the importance of continual learning and self-evaluation.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be able to assess their own educational progress, the degree of satisfaction with their past efforts, and will have a fairly accurate picture of their academic strengths and weaknesses.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

WORKSHEET #8

INDICATOR: Students will be able to recognize a problem objectively and define it clearly, using a rational, logical approach.

SAMPLE CURRICULAR OBJECTIVE

Given information concerning student grievances, students graduating from eighth grade social studies will be capable of defining the apparent problem(s), avoiding the common error of stating causes or recommended solutions as being the problem itself.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

SCREENING OBJECTIVES

SUGGESTED RESPONSES FOR WORKSHEETS

- Compare your team's answers with those suggested by the developers. These responses are only suggested alternatives. If your judgments and explanations are different, they may still be very appropriate.
- If large discrepancies exist, discuss the issue with the coordinator.

SUGGESTED RESPONSE

WORKSHEET #1

INDICATOR: Students will become skillful in locating reference materials, securing needed information, and evaluating the information for its accuracy and appropriateness.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be able to demonstrate proficiency in using a variety of reference sources (maps, encyclopedias, almanacs, card catalogs) to locate needed information for writing social studies reports.

[X] Keep as is

[ ] Revise
- [ ] Insufficient guidance
- [ ] Irrelevant
- [ ] Infeasible

[ ] Reject
- [ ] Insufficient guidance
- [ ] Irrelevant
- [ ] Infeasible

Explain your team's reasoning here when necessary:

SUGGESTED RESPONSE

WORKSHEET #2

INDICATOR: Students will become skillful in locating reference materials, securing needed information, and evaluating the information for its accuracy and appropriateness.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will achieve an understanding of the Dewey decimal system so they can locate reference materials in a library.

☐ Keep as is

☐ Revise

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☒ Reject

- ☒ Insufficient guidance
- ☒ Irrelevant
- ☒ Infeasible

Explain your team's reasoning here when necessary:

This objective fails to meet any of the three criteria. Guidance: It provides little guidance as to the curricular area in which the behavior is to occur. (Should the schools develop a library science program, or can the skills be taught in the Social Science or English program?) The intended behavior is not very clear either. Planners may have several different opinions about what is meant by "an understanding."

Relevance: Will students need to understand the Dewey decimal system in order to become skillful in "locating reference materials in a library"? Would teachers, parents, educational specialists, subject matter experts, and the learners consider this a worthwhile objective? Probably not.

Feasibility: The benefit (should there be one) of teaching students the Dewey decimal system probably would not justify the costs for personnel, material, and resources, nor the time it would take to accomplish the task.

SUGGESTED RESPONSE

WORKSHEET #3

INDICATOR: Students will become intellectually curious and demonstrate a desire and capability to learn independently.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be willing to assume responsibility for student government activities and actively participate in student affairs, elections, etc.

☐ Keep as is

☐ Revise
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☒ Reject
- ☐ Insufficient guidance
- ☒ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

This objective does not relate to the goal or any of the indicators.

It probably should be rejected.

SUGGESTED RESPONSE

WORKSHEET #4

INDICATOR: Students will be able to analyze, interpret, and evaluate experimental results, observations, reading selections and other sources of information to arrive at generalizations and conclusions.

SAMPLE CURRICULAR OBJECTIVE

Given recently drawn conclusions concerning ecological imbalance, eighth grade students, by graduation, will be able to collect and analyze various ocean specimens in order to support or challenge the conclusions.

☐ Keep as is

☒ Revise

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☒ Infeasible

☐ Reject

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

Feasibility: Since the school is not located near an ocean and the budget does not allow for extensive field trips, it would be excessively difficult for students to collect various ocean specimens.

SUGGESTED RESPONSE

WORKSHEET #5

INDICATOR: Students will be able to distinguish between relevant and irrelevant information and between statements of fact and value-laden opinions.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be able to distinguish relevant from irrelevant information when screening the school district's annual budgetary report for data that supports or challenges the cost effectiveness of the drug abuse program.

☐ Keep as is

☒ Revise

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☒ Infeasible

☐ Reject

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

Feasibility: Most eighth grade students would have trouble deciphering the school district's budget report. It is conceivable that the budget report would not be accessible to students; and in this case the budget does not contain program-by-program cost-effectiveness data. This objective might also deserve rejection since most of it would need to be rewritten.

SUGGESTED RESPONSE

WORKSHEET #6

INDICATOR: Students will become skillful in locating reference materials, securing needed information, and evaluating the information for its accuracy and appropriateness.

SAMPLE CURRICULAR OBJECTIVE

By graduation from eighth grade, students will be able to collect and evaluate information about problems felt to be appropriate.

☐ Keep as is

☒ Revise
- ☒ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject
- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

Guidance: It does not specify the curricular area in which the behavior is to occur, nor what kind of information is required, nor who will decide whether the problems are appropriate. It provides little guidance for devising learning experiences or evaluation techniques.

SUGGESTED RESPONSE

WORKSHEET #7

INDICATOR: Students will recognize the importance of continual learning and self-evaluation.

SAMPLE CURRICULAR OBJECTIVE

By graduation, eighth grade students will be able to assess their own educational progress, the degree of satisfaction with their past efforts, and will have a fairly accurate picture of their academic strengths and weaknesses.

☐ Keep as is

☒ Revise

- ☒ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

☐ Reject

- ☐ Insufficient guidance
- ☐ Irrelevant
- ☐ Infeasible

Explain your team's reasoning here when necessary:

Guidance: It does not mention the curricular area in which the behavior is to occur. (Will the students assess their progress in all courses, in the math course, in music?) Secondly, it does not specify how the students will demonstrate that they have assessed their educational progress. Therefore, it does not provide much guidance for designing learning experiences or evaluation.

SUGGESTED RESPONSE

WORKSHEET #8

INDICATOR: Students will be able to recognize a problem objectively and define it clearly, using a rational, logical approach.

SAMPLE CURRICULAR OBJECTIVE

Given information concerning student grievances, students graduating from eighth grade social studies will be capable of defining the apparent problem(s), avoiding the common error of stating causes or recommended solutions as being the problem itself.

[X] Keep as is

[ ] Revise
- [ ] Insufficient guidance
- [ ] Irrelevant
- [ ] Infeasible

[ ] Reject
- [ ] Insufficient guidance
- [ ] Irrelevant
- [ ] Infeasible

Explain your team's reasoning here when necessary.

Self-Test

This test is designed to help you review the concepts presented to you in this module. You should spend only a short amount of time on the test. When you have completed it, turn to the suggested responses that follow. If you have made any errors, you should carefully review pages 55 to 58 of Module Two in your notebook. When you have finished the self-test, you have completed Module Two.

I. List and define three criteria that are useful in determining the adequacy of curricular objectives.

1.

2.

3.

II. Of the following, check those FOUR questions you would ask when determining whether a curricular objective provides sufficient GUIDANCE.

1. ____ Does the potential benefit of achieving the objective justify the amount of time it would take?

2. ____ Can you measure the attainment of this objective?

3. ____ Does the objective clearly indicate what the student is to do?

4. ____ Do educational specialists and subject matter experts consider this a worthwhile objective?

5. ____ Will the objective have any ill-effects on the learner?

6. ____ Is the specification sufficient for selecting curricular materials and designing learning experiences that will contribute to the attainment of the objective?

7. ____ Is the objective consistent with student abilities?

8. ____ Can planners assign responsibility and accountability for the objective to a curricular subject area or to several if common responsibilities are apparent?

III. Of the following, check those FOUR questions you would ask when determining whether a curricular objective is RELEVANT.

9. ____ Is enough known about the type of learning implied to ensure a chance of accomplishment?

10. ____ Is the objective consistent with student abilities?

11. ____ Will attainment of the objective assist the student in becoming an effective person in his society and culture?

12. ____ Is this an objective that students would consider important to them?

13. ____ Do teachers, other members of the school staff, educational specialists and subject matter experts generally agree that this is a worthwhile objective?

14. ____ Will the achievement of the objective lead toward the attainment of the long-range goal from which the objective is derived?

15. ____ Does the potential benefit of achieving the objective justify the amount of time it would take?

IV. Of the following, check those FOUR questions you would ask when determining whether a curricular objective is FEASIBLE.

16. ____ Is the potential benefit of achieving the objective worth the time it would take and the foreseeable costs for personnel, material, and resources?

17. ____ Does the objective specify a behavior that will be useful to the learner immediately and after he is no longer in school?

18. ____ Does the objective clearly indicate the desired student behavior?

19. ____ Is this an objective that students would consider important to them?

20. ____ Will attainment of the objective assist the student in becoming an effective person in his society and culture?

21. ____ Should the objective have foreseeable social impact, is it desirable in light of the possible consequences to the institution?

22. ____ If the objective deviates from present practices, is it desirable in light of foreseeable consequences of change and reorganization within the institution?

23. ____ Is enough known about student abilities and the type of learning implied to ensure a chance of accomplishment?

V. If you are unable to find FOUR, or unable to satisfy yourself with only FOUR in each of exercises II, III and IV, or seriously disagree with any classification in the suggested responses, discuss this with the coordinator and the other participants.

Self-Test: Suggested Responses

I. 1. Guidance

2. Relevance

3. Feasibility

II. 2, 3, 6, 8

III. 11, 12, 13, 14

IV. 16, 21, 22, 23

V. Are you quite happy now?

Module Three

ANALYZING SETS OF CURRICULAR OBJECTIVES

Part 2: Terrabella High Simulation

Introduction

In Module Two you dealt with individual curricular objectives that were samples of the types of objectives that make up an entire set. You screened the objectives through the criteria of Guidance, Relevance, and Feasibility to determine the adequacy of each objective.

In this module you will be dealing with factors that relate specifically to the adequacy of sets of curricular objectives. THE FIRST STEP IS TO READ THROUGH THE PROGRAMMED TEXT (Part 1) ON HOW TO ANALYZE SETS OF CURRICULAR OBJECTIVES. WE RECOMMEND THAT YOU COMPLETE Part 1 OUTSIDE OF THE CLASSROOM SO THAT YOU MAY PROCEED AT YOUR OWN PACE.

In Part 2 you will be working with your teams as members of a simulated curricular planning committee. You will be determining the adequacy of a set of curricular objectives dealing with a high school environmental studies program. You will also be recommending ways to revise the set to make it more acceptable for selecting, designing, or revising curricular programs and deciding on methods of evaluation.

TRAINING OBJECTIVES

When you have completed Module Three you should be able to:

1. Understand the usefulness of four factors to consider when analyzing the adequacy of sets of curricular objectives, these being:
   - appropriateness of representation and emphasis of cognitive behaviors,
   - adequacy of representation of affective behaviors,
   - adequacy of subject matter coverage,
   - internal consistency.
2. Select from a list the kinds of information that would prove most useful in judging sets of objectives in terms of the first three factors.
3. Select from a list the types of actions one should take when faced with the problems of internal inconsistency in a set of objectives.
4. Analyze any set of curricular objectives in terms of the above four factors (given proper information to make such an analysis).
5. Recommend ways to revise an inadequate set of curricular objectives to make it more acceptable in terms of the above four factors.

Module Three
Part 2

Terrabella High Simulation

(YOU SHOULD HAVE COMPLETED Part 1, THE PROGRAMMED TEXT, BEFORE PARTICIPATING IN THIS SIMULATION.)

Directions

1. Form into teams of from three to five participants.

2. Begin reading the Memorandum and attachments from Xavier Wyrld, superintendent of the simulated school district of Terrrbella. Wyrld will describe the analysis tasks you are to perform.

3. If you wish, you may first complete each analysis form individually. However, you should compare your analysis with those of your team members to arrive at a team consensus. It is the team's response that should be compared with the suggested responses for each analysis form.

MEMORANDUM

To: Curricular Planning Committee

From: Xavier Wyrld, Superintendent

We have just completed our one-year pilot Environmental Studies program at Terrabella High. We initially received a great deal of support for this type of program from students, teachers, and the community. Unfortunately, it appears that the program did not meet everyone's expectations. I feel it is time that we do some rethinking about our instructional aims in order to make better selections of materials and learning experiences for next year's course.

I am enclosing the goal, its related indicators, and the curricular objectives we devised for last year's program. I want you to analyze the set of objectives and make suggestions about how we could improve and expand the set to make it more adequate for our curricular decision making needs. Attachment 3 of the memo is an analysis guideline which I urge you to use in making your suggestions.

We offered Environmental Studies as an elective this year though we eventually hope to make it a required course. We had an unprecedented high enrollment for an elective course during the first semester. However, enrollment decreased by 20 per cent during the second semester, even though Environmental Studies somehow received a reputation as being a "cinch" course.

It seems that the program failed to challenge most of the students and was not successful in motivating them to take an interest in the ecological problems of their community and their world. I base this statement on a great deal of feedback received from teachers, involved community groups, and students. Attachment 1 is a summary of their suggestions and criticisms.

Attachment 2 is a letter received from Dr. Wintergreen, a curriculum specialist, who has been involved at the state level in planning ecology programs. I think you will find his statements helpful in analyzing our objectives.

I appreciate your help in this matter. I feel that with the experience we have obtained this year we should be able to formulate a much better course for the future.

Goal and Goal Indicators for The Environmental Studies Program of Terrabella High School

THE ENVIRONMENTAL STUDIES PROGRAM WILL CONCENTRATE ON CONTRIBUTING TOWARD THE ACHIEVEMENT OF THE FOLLOWING GOAL AND GOAL INDICATORS:

GOAL: *To equip students to be responsible members of the world that they are shaping and that is shaping them.*

GOAL INDICATORS: Students will develop:

1. an understanding of how man is using and misusing his resources;
2. a willingness and ability to work directly with environmental problem solving;
3. an understanding that conservation is the responsibility of everybody, that it is a world-wide necessity which transcends political boundaries and man-made laws;
4. an appreciation of the aesthetic beauty of their world and a willingness to preserve things for aesthetic reasons, rather than allow beauty to vanish for purposes of economic gain;
5. a growing realization that mankind cannot continue in his traditional ways of dealing with his world and that these attitudes in the past have led, in part, to the present environmental crisis.

FROM THE GOAL AND GOAL INDICATORS
THE FOLLOWING CURRICULAR OBJECTIVES WERE DEVELOPED:

	Curricular Objectives	Type of Behavior	Level
1.	Given the requirements of an ecologically balanced environment, and the probable effects resulting from changing one basic element in a previously balanced environment, students will be able to locate actual examples from natural history.	Cognitive	Comprehension
2.	Students will be able to point out examples of natural ecological relationships while in natural field settings.	Cognitive	Application
3.	Students will be able to explain, in their own words, how predators and natural attrition contribute to the maintenance of the balance of nature.	Cognitive	Comprehension
4.	Students will be able to list the basic physical requirements for supporting life.	Cognitive	Knowledge
5.	Students will be able to explain, in their own words, the key concepts having to do with evolution (e.g., natural selection).	Cognitive	Comprehension
6.	Students will be able to describe how at least three animals and three types of plants have adapted to the climatic and physical features of their local area.	Cognitive	Comprehension
7.	Students will be able to describe or illustrate the disruption of natural ecological cycles resulting from the introduction of man-produced chemical agents into the biosphere.	Cognitive	Comprehension

	Curricular Objectives	Type of Behavior	Level
8.	Students will be able to describe and/or illustrate some of the major changes that man has wrought on the earth's land areas and wildlife as a result of his past and/or present actions	Cognitive	Comprehension
9.	Students will gather statistics and other relevant data to support the hypothesis that overpopulation is the underlying cause of our environmental prolems, and that disaster is inevitable should effective measures not be taken to limit populations.	Cognitive	Comprehension
10.	Given a list of the harmful components of the most common pollutants, students will be able to point out examples of some of the effects these components have on an area within their own community.	Cognitive	Application
11.	Having studied the detrimental implications of the accelerated abuses of food by the inclusion of additives, adulterants, preservatives, and pesticides, students will be able to devise ways in which they can work toward stopping such abuses.	Cognitive	Synthesis
12.	Using appropriate data, students will be able to show how increased production of waste and effluents is related to the increased demands by society for industrial production and energy.	Cognitive	Comprehension
13.	Students will gather statistics and other relevant data to support the hypothesis that wasteful use and poor allocation of our vital resources is the underlying cause of our environmental problems, and that disaster is inevitable should a proper balance of resource use and wants not be achieved.	Cognitive	Comprehension

Curricular Objectives	Type of Behavior	Level
14. Having examined evidence of scenic pollution in their school, home and community, students will be able to describe how industries, inefficient waste disposal and inefficient uses of resources have contributed to the problem.	Cognitive	Comprehension
15. Students will be able to explain, in their own words, why it is important that man conserve his vital resources.	Cognitive	Comprehension
16. Students will be able to explain, in their own words, why it is important to protect endangered species, regional and local wildlife populations and natural wildlife balances.	Cognitive	Comprehension
17. Students will be able to list some of the potential energy sources which could be employed in the future when resources commonly used today are depleted.	Cognitive	Knowledge
18. Students will demonstrate a willingness to carry forth, as far as possible, the never-ending study of how and why all living things are bound up together in a countless, and often subtle, series of interrelationships (ecology).	Affective	Valuing

It is understood that these objectives will be attained by the end of the one-year Environmental Studies Program.

ATTACHMENT 1

Samples of Student, Teacher, and Community Reactions to the Environmental Studies Program

Student Reactions:

"You succeeded in really turning me off. Lots of facts and figures about what's wrong, but nothing about what's being done about it. We're all doomed!"

"One thing for sure, you can't figure out where it's at in ecology by sitting inside four ugly walls, reading lots of facts, and listening to dull lectures!"

"I didn't feel like the Environmental Studies Program related to me as a person. What am I supposed to do with all these facts? What can I do as an individual to ward off the impending doom?"

"I don't see what all those scientific facts do for us when we've got governments supporting the establishment, money-grubbing industrialists and their buddies, and the mass media brainwashers who are duping the public into buying junk that will destroy them and their surroundings."

"The teacher came in every day, loaded us with lots of stuff to read, and that was that. A lot of us wanted to organize and try to do something constructive in our community, but we didn't know where to begin. The teachers should have suggested ways we could work towards ecological improvement. None of us felt like we had much support."

"Lots of guys were in my class because it was an easy A. They screwed around a lot and kept us from concentrating on our studies. Then those same guys drove around in their hot cars polluting our air and throwing beer cans and stuff on our streets. It doesn't seem to me that the course got the message across."

"I am an artist and a lot of kids in the program paint, sculpt, and are into music and other artistic things. We all have a deep inner feeling about life, its beauty and the importance of maintaining the beauty of our surroundings. Yet we didn't fit into this course at all. It was designed for all the science brains in the school."

"I don't see how you can teach ecology in class and then poison us in the school cafeteria with artificial preservatives, DDT, and other junk."

"Typical white middle class program. Lots of facts about science and wilderness, but nothing about the ecological problems of ghettos."

Teacher Reactions:

"The course failed to relate ecological problems to the individual students. They were never brought to an awareness that their own actions and the satisfaction of many of their individual wants have many effects on their environment and the utilization of vital resources."

"Not very many students participated in environmental improvement projects in their community."

"Some disciplinary problems. Students were bored. Many were frustrated because they could not see the purpose of learning mary of the facts we were teaching."

"The text book selected for the program was an unfortunate choice. It was too heavily oriented toward conservation and natural science. Much more emphasis on the economic, political, social, and personal implications of ecological change is needed. For example, the ecological problems related to urbanization were totally ignored."

"The course stressed much too much comprehension and rote learning. My students were frustrated. They wanted to apply their learning. They were anxious to get out into the community, research the issues, locate a real problem and try to find ways to solve it."

"Students wanted to find ways of actively involving themselves in sophisticated community problems, not just 'clean up the school' projects."

"Students needed to be outside and in the community studying problems first hand. More field trips and perhaps week long camping trips are needed. Students need to get out and talk to politicians, industrialists, economists, and conservationists in their own community."

"We may have developed a sense of doom in our students. They were overwhelmed with facts about resource scarcities and harmful effects of pollutants, but were not given information about what is being done or could be done to combat the problems."

Community Reactions:

"Students That Oppose Pollution is a very active young people's group sponsored by our organization. Most of the members are from City College, but our membership is also open to high school students. We were surprised to find that the high school membership did not increase significantly even though Environmental Studies was being offered at Terrabella."

John Treehaven, President
Lovers of the Woodlands

"We actively sought to involve young people in our neighborhood clean-the-scene campaign. We received more helpers from the elementary schools than we did from Terrabella High. Yet more of our tax money has gone into the High School Environmental Studies Program than any of the elementary programs. What's the explanation"?

Mrs. Elsie Greenleaf (parent)

"We were surprised that no students from your Environmental Studies Program contributed exhibits to our Earth Day Exhibition at Shady Lake Recreation Center."

Terrabella Chamber of Commerce

"One of your teachers brought some students from the Environmental Studies Program to Gipsum Pond to observe the effects of water pollution. As a result, several students appeared the following Saturday and picketed all day protesting our dumping of waste in the pond.

This pond has not been used for years except for all manner of legitimate and illegitimate garbage. It belongs to Gipsum Concrete Corporation and it shouldn't be anyone's concern but our own as to what is dumped in it. But my worst complaint is that no one explained to the students that Gipsum engineers are studying alternatives for waste disposal.

As you know, I have actively supported many of your new programs. I am willing to host student field trips and provide guest speakers. But I think we industrialists are getting short changed in your latest experiment. You ought to be teaching those kids that technology is our only hope toward saving our environment. You should be teaching these kids patience. After all, we are only beginning to find some answers, and they are very difficult to implement, not to mention being extremely costly. We are all in trouble if young people learn to distrust industrialists and technology."

G. I. Gipson, President
Gipson Concrete Corporation

"If your school is going to promote electronic rock bands, the least you could do is teach the students about noise pollution in your Environmental Studies Program."

Silas Sereno, President
Terrabella Anti-Noise League

"Our concern rests <u>especially</u> in the area of population control. So much emphasis has been given recently to birth control techniques that our children have become appallingly sophisticated in their practice. The moral codes which we grew up with seem purposely to have been outmoded by scientists seeking more and more ways to run the world according to a mechanistic plan, rather than one guided by meaningful values."

Seymore Wright, Secretary
Sons and Daughters of the American West

"We strongly object to any program stressing population control. You will find that few, if any, students from minority races will enroll in such a course. We refuse to perpetuate a political situation which capitalizes on our relatively small numbers to suppress the needs and desires of human beings with unique cultures of their own."

Terrabella Minority Coalition

ATTACHMENT 2

Dear Xavier:

I was pleased to hear that Terrabella has developed a curriculum in environmental education. The schools have long neglected this vital area.

As you have discovered it is difficult to design a single course that provides the balance and scope our students need in understanding the complex nature of our environment.

I recommend that your staff avoid a frequent mistake made by many--that of developing courses that teach separate aspects of the problem. Such courses fail to consider the interdisciplinary nature of our environment. The course should be structured to impress on the students the interdependence of all aspects of nature and the vital relationships that exist.

I have attempted to list some of the important skills and concepts which the curriculum should emphasize. Although not exhaustive, the list will provide a fair sampling of important areas of study.

- The curriculum should concentrate on problem solving. People will need to develop the capability of finding and applying the knowledge necessary to solve real world problems. Problems used in instruction should range from the simple to the very complex in order to give students experience in systematically solving complex situations.

- Provide a broad spectrum of representative knowledge. Obviously, there are far too many problem areas in studying the environment for students to grapple with in a single course. Therefore, a carefully selected sample is the most practical. Such a sample should include a familiarity with the potential contributions that other disciplines besides the natural sciences (e.g., math, the social science disciplines, etc.) can offer to the solution of problems.

- Provide a broad spectrum of representative experiences that will impress students with the universal interdependence of all life forms. Some sample experiences might include:

  - National policy and its effect on the environment;

  - the effects of change on a local, natural ecosystem;

  - measuring pollution components of local industrial plants;

  - examining natural ecological relationships that exist in a forest or field setting;

- study of the food chains and various life cycles;
- the study of technology, upon which we depend, and its effects on the natural environment;
- study of man's dependence as a species on the bacteria in the soil and the algae of the sea to provide the basic links in the food chain and on the supply of oxygen.

- Promote increased understanding, awareness, and sensitivity to life around us. Students should be aware of the human condition, and the aspirations of man for a life of meaning, dignity, and satisfaction. They should be aware of the cumulative effects of decisions made on people in ghettos, in suburbia, or in rural areas, and that these effects are often long-term, sometimes irreversible.

I wish to restate that no course can possibly produce the problem-solvers and the value changes that may be necessary. Hopefully, your efforts will provide the impetus to motivate students to continue study in this needed area and to become more active in helping mankind solve some of its most serious and potentially fatal problems.

Sincerely,

Waldo Wintergreen

ATTACHMENT 3

ANALYSIS PROCEDURES FOR SCREENING SETS OF CURRICULAR OBJECTIVES

I would like you to consider the following questions in analyzing the set of objectives for the Environmental Studies Program:

- THE APPROPRIATENESS OF THE REPRESENTATION AND EMPHASIS OF COGNITIVE BEHAVIORS
- THE ADEQUACY OF REPRESENTATION OF AFFECTIVE BEHAVIORS
- THE ADEQUACY OF SUBJECT MATTER COVERAGE
- INTERNAL CONSISTENCY

I have provided an analysis form for each of these factors. Please record your committee's decisions on each form. You should record any inadequacies you detect in the set, carefully explain your reasoning, and recommend ways to change the set so it will be more acceptable in terms of the above four factors.

Keep in mind that these analysis forms will be read by staff members responsible for revising or expanding the set. Your suggestions will be a great aid to them, I am sure.

I. APPROPRIATENESS OF REPRESENTATION AND EMPHASIS OF COGNITIVE BEHAVIORS

First I would like you to analyze the set (pp.102-106) and decide whether the representation and emphasis of cognitive objectives is appropriate. If it is, I would like you to explain why. If it is not, please suggest a better representation.

The objectives in the set have already been classified using Bloom's cognitive taxonomy. (Refer to the enclosed version of Bloom's taxonomy to aid you in your decisions.) Remember, in determining whether these behaviors are appropriate you should consider:

- THE GOAL AND GOAL INDICATORS
- CHARACTERISTICS OF STUDENTS (their abilities, interests, and needs)
- THE NATURE OF THE SUBJECT MATTER

COGNITIVE TAXONOMY[1]

KNOWLEDGE: Students recall, recognize, or remember specific items, information, objectives, terminology, attributes and so forth.

COMPREHENSION: Students can demonstrate understanding of concepts by perceiving and/or identifying the meaning of material presented to them, can see relationships, describe in their own words, draw conclusions.

APPLICATION: Students select and use one or more learned principles to produce or alter something; select and use formulas to solve problems; select and use appropriate rules or procedures to work on material.

ANALYSIS: Students distinguish constituent parts of ideas, materials, communications (e.g., distinguish fact from hypothesis, identify unstated assumptions); determine relationships of the parts; recognize the form,structure, or organizational principles of the ideas, materials, communications.

SYNTHESIS: Students produce a unique communication, plan, set of abstract relationships; produce, use, or alter something in a form or manner that in some way goes beyond any existing structures or principles of which they are aware.

EVALUATION: Students judge the value of ideas, works, solutions, materials, methods, etc., using their own or given criteria and standards; appraise the extent to which things are accurate, effective, satisfying, efficient, practical, etc.

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[1]Based on Benjamin S. Bloom, ed. Taxonomy of Educational Objectives; *Handbook I: Cognitive Domain.* (New York: David McKay, 1956).

RESPONSE FORM 1

1. What level of cognitive behavior receives the greatest representation in the set?

   _____

2. Condidering the goal and goal indicators, student characteristics, and the subject matter, is this an appropriate emphasis?

   ____Yes ____No

3. Explain your reasoning.

If you answered "no" above, recommend a representation and emphasis that you feel would be more appropriate.

(You may refer to the suggested response for this before continuing.)

SUGGESTED RESPONSE TO FORM 1

This sheet contains only suggested alternatives. Your team's response may be as appropriate. If large discrepancies exist, discuss them with the coordinator.

1. What level of cognitive behavior receives the greatest representation in the set?

   Comprehension

2. Considering the goal and goal indicators, student characteristics, and the subject matter, is this an appropriate emphasis?

   ___Yes X No

3. Explain your reasoning.

   The emphasis on comprehension is inappropriate considering that:

   1. *one of our goal indicators states students are to develop an "ability to work directly with environmental problem solving";*
   2. *it appears that the students want to involve themselves in actual problem-solving activities; and*
   3. *subject matter experts suggest we concentrate on problem-solving behaviors.*

If you answered "no" above, recommend a representation and emphasis that you feel would be more appropriate.

We should emphasize APPLICATION objectives and try to obtain a better representation of ANALYSIS, SYNTHESIS, AND EVALUATION objectives.

FURTHER THOUGHTS ON LEVELS OF COGNITIVE BEHAVIOR

ONE WAY TO CHANGE THE REPRESENTATION OF A SET IS TO REWRITE MANY OF THE INDIVIDUAL OBJECTIVES TO THE LEVELS OF BEHAVIOR YOU WISH TO EMPHASIZE. The following are examples of how some of the objectives in this set could be revised to represent higher levels of behavior. Compare this with the list of objectives.

Number of the Objective	New Level	Revised Objective
1	Application	Given the requirements of an ecologically balanced environment, students will be able to conduct experiments demonstrating the effects of changing one basic element in a previously balanced environment.
3	Application	Students will be able to conduct an experiment demonstrating how predators and natural attrition contribute to the maintenance of the balance of nature.
4	Application	Given the basic physical requirements for supporting life, students will be able to conduct an experiment with plants that demonstrates these requirements.
5	Application	Given a list of key concepts having to do with evolution (e.g., natural selection) students will be able to demonstrate how an animal of their choice has been affected by this factor.
6	Application	Given descriptions concerning how local animals and plants have adapted to the climate and physical features of their area, students will be able to point out examples when in a field setting.
7	Application	Students will conduct a botanical experiment demonstrating the disruption of natural ecological cycles resulting from the introduction of man-produced chemical agents into the biosphere.

Number of the Objective	New Level	Revised Objective
10	Analysis	Having observed and recorded the effects of air and water pollution on some area in their community, students will conduct research and/or scientific experiments to arrive at chemical or physical explanations for what happened.
14	Synthesis	Having studied various examples of pollution of the aesthetic environment in their school or community, students will be able to devise ways in which they can effectively contribute toward minimizing or eliminating at least one of the problems.
16	Synthesis	Having studied about the importance of protecting endangered species, regional and local wildlife populations, and the natural wildlife balance, students will be able to select one endangered species (preferably of their locality or region) and outline steps which they might take to lessen the danger to it.
17	Comprehension	Given a list of potential energy sources which could be employed in the future as alternatives to the resources commonly used today, students will be able to project how the use of these alternative resources would change peoples' day-to-day life styles and consumer habits.

II. ADEQUACY OF REPRESENTATION OF AFFECTIVE BEHAVIORS

Please analyze the set and decide whether it contains an adequate representation of affective objectives.

I realize that writers of objectives often ignore affective behaviors, especially at the higher levels of the taxonomy, because they are difficult to achieve measurably in a school setting. Nevertheless, it would be a mistake not to reflect the importance of generating student interest and developing appropriate attitudes in a set of objectives dealing with environmental studies.

Remember, in determining the adequacy of representation of affective behaviors you should consider:

THE GOAL AND INDICATORS

THE NATURE OF THE SUBJECT MATTER

RESPONSES FROM STUDENTS, STAFF, SUBJECT MATTER EXPERTS, PARENTS AND/OR COMMUNITY

If you think additional affective objectives should be included, note the kinds of objectives you feel should be added. List the level of behavior and the focus of the objective (i.e.,what the objective is about). You need not actually write objectives in correct behavioral terms. For example:

Level of Behavior	Focus of the Objective
Valuing	*Commitment toward improving their environment*

The affective behavior taxonomy on the next page will aid in your recommendations.

AFFECTIVE TAXONOMY[2]

RECEIVING	Students pay attention, are willing to listen and look.
RESPONDING:	Students are willing to comply with regulations, are actively interested, and enjoy participation.
VALUING:	Students attach worth to activity, assume active responsibility and demonstrate a stable commitment to the activity or belief.
ORGANIZING:	Students form judgments about new values and organize them into a priority system.
CHARACTERIZING BY VALUE OR VALUE COMPLEX:	Students selectively and consistently respond to a variety of stimuli according to a value system, are willing to revise judgments in light of evidence, are willing to judge problems in terms of situations, issues, and consequences rather than in terms of fixed, dogmatic precepts or wishful thinking.

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[2] Based on David R. Krathwohl, et al. Taxonomy of Educational Objectives; *Handbook II: Affective Domain.* (New York: David McKay, 1964).

RESPONSE FORM 2

1. Considering the goal and indicators, the nature of the course, and feedback we have received from involved and interested groups, would you say that our set contains an adequate representation of affective objectives?

___Yes ___No

2. If not, what kinds of affective objectives would you recommend we include?

Level of Behavior Focus of the Objective

3. Give reasons for your recommendations:

(You may refer to the suggested response for this before continuing.)

SUGGESTED RESPONSE TO FORM 2

This sheet contains only suggested alternatives. Your team's response may be as appropriate. If large discrepancies exist, discuss them with the coordinator.

1. Considering the goal and indicators, the nature of the course, and feedback we have received from involved and interested groups, would you say that our set contains an adequate representation of affective objectives?

___Yes _X_ No

2. If not, what kinds of affective objectives would you recommend we include?

Level of Behavior	Focus of the Objective
Responding	*Developing active interest in the activities of the program.*
Responding	*Willingness to comply with the beautification, conservation, and maintenance regulations of their school and community.*
Valuing & Organizing	*Appreciation of how students' personal life patterns and wants affect their environment and willingness to change life patterns should they prove detrimental to the environment.*
Valuing	*Developing commitment to improving their environment.*
Valuing	*Developing an aesthetic appreciation of beauty in one's surroundings, of life in all its forms.*

3. Give reasons for your recommendations:

It is apparent from student, teacher, and community feedback that students were not developing a commitment toward improving their environment and were not realizing how their personal values and wants affect their environment.

Goal indicator #4 and art student complaints about their feelings of alienation in a scientifically-oriented course warrant an affective objective on the aesthetic appreciation of beauty in our surroundings.

III. ADEQUACY OF SUBJECT MATTER COVERAGE

We should concern ourselves with important areas of knowledge in environmental education which are not represented by objectives in the set. In analyzing whether our set is comprehensive in this respect, you should refer to:

- THE GOAL AND INDICATORS
- THE NEEDS AND INTERESTS OF THE STUDENTS
- THE NEEDS AND DESIRES OF THE SCHOOL COMMUNITY (parents, taxpayers, future employers, etc.)
- OPINIONS OF SUBJECT MATTER EXPERTS AND STAFF MEMBERS

If you do not think we have adequately covered the subject, please list some of the subject matter areas you feel should be included in the set. Many of our teachers, students, and concerned community groups have offered good suggestions. Also refer to the letter from Dr. Wintergreen that summarizes expert opinions on the areas that should be covered in an environmental studies course.

RESPONSE FORM 3

1. Is the set broad enough to cover the subject of environmental studies adequately?

___Yes ___No

2. If not, what subject matter areas do you feel should be included in the set?

3. Give reasons for your recommendations:

(You may refer to the suggested response for this before continuing.)

SUGGESTED RESPONSE TO FORM 3

This sheet contains only suggested alternatives. Your team's response may be as appropriate. If large discrepancies exist, discuss them with the coordinator.

1. Is the set broad enough to cover the subject of environmental studies adequately?

   ___Yes _X_ No

2. If not, what subject matter areas do you feel should be included in the set?

   Urban crisis

   Political and economic implications of environmental change (i.e., national policy)

   Personal values and wants and how they affect the way we use or misuse our resources

   Technology's and industry's role in attempting to solve ecological problems

   Sound pollution

   How decisions concerning resource use affect people in ghettos, suburbia, rural areas

3. Give reasons for your recommendations:

   Students and teachers complained of the overemphasis on conservation and science. Subject matter specialist suggests more emphasis on the political, economic, social, and personal ramifications of environmental change. Humanities students (artists, musicians) complained of alienation in a science-oriented program. Criticisms were received from industrialists on the lack of information concerning the positive role technology is playing in environmental improvement. Students, teachers, and concerned citizens complained that the course neglected the problems of urbanization and the ghettos.

IV. INTERNAL CONSISTENCY

Look for any objectives that seem to interfere with the attainment of others. For example, one objective might emphasize that students develop a reasoned attitude toward acceptance of authority. Another objective in the same set might stress the development of independent reasoning. Even though these objectives may be compatible, a balance of time and effort between them will be necessary. Otherwise, inordinate time on one type runs the risk of sabotaging the other.

If you detect possible contradictions between objectives, please note them on your analysis forms, giving suggestions for resolving the contradictions.

RESPONSE FORM 4

1. Are there any objectives that seem to contradict each other?

___Yes ___No

2. If so, list the objectives and the reasons for their apparent contradiction.

3. Recommend ways in which the contradiction(s) could be resolved.

(You may refer to the suggested response for this before continuing.)

SUGGESTED RESPONSE TO FORM 4

This sheet contains only suggested alternatives. Your team's response may be as appropriate. If large discrepancies exist, discuss them with the co-ordinator.

1. Are there any objectives that seem to contradict each other?

   _X_ Yes ___ No

2. If so, list the objectives and the reasons for their apparent contradiction.

   a. *Objective 9 contradicts objective 13. Both claim to be the underlying cause of environmental problems.*

   b. *It is possible that an overemphasis on objective 13 (combined with objective 15) could sabotage objective 17.*

3. Recommend ways in which the contradiction(s) could be resolved.

   a. *Rewrite both objectives 9 and 13 so that they read "is an underlying cause" or "is one of the major underlying causes."*

   b. *Rewrite objective 13 so that it does not emphasize the "doom" or "inevitable disaster" side of the picture, but instead stresses the importance of achieving a proper balance between resources and wants.*

SETTING PRIORITIES

There is one other thing to consider in dealing with a set of objectives. Is the set feasible? Can all the objectives be achieved satisfactorily given such constraints as time, budget, and personnel?

If there is any doubt that all objectives can be met, it is best to group the objectives into priority categories such as high priority, middle priority, and low priority.

There are various ways to establish priorities ranging from purely subjective decisions on the part of planners to tallying responses from students, staff members and the community about what are felt to be the most important objectives.

Setting objective priorities (as well as formulating the objectives themselves) should always be regarded as a dynamic process. It may turn out that certain priority objectives are not being met once the program is implemented and evaluated. Planners must then reconsider the priorities. Are the unattained objectives really that important? If more time, effort, and money must be spent to achieve the objectives, will it take away from those objectives that were successfully achieved? If so, is it worth it?

One final point also should be remembered. Priority lists and sets of objectives themselves are not always the only determinant of what should be taught in the classroom.

> Some moments are ripe for teaching toward an unplanned objective. A sound educational system is one which provides for occasional reassignment of immediate objectives to take advantage of the special opportunities that occur.[3]

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[3]Robert E. Stake. Language, Rationality, and Assessment. (Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1969.)

Module Four

DISTRICT PLANNING FOR GOAL REFINEMENT

INTRODUCTION

In Modules One, Two, and Three, you have dealt with various elements of the goal refinement process. In Module One the process itself was defined and its benefits were listed and described. In Module Two you screened and revised given curricular objectives to meet the criteria of guidance, relevance, and feasibility. In Module Three you determined whether sets of given curricular objectives emphasized appropriate types and levels of student behavior, whether they contained adequate subject matter coverage, and were internally consistent.

The modules up to this point have focused on specific knowledge and skills for the goal refinement process. In Module Four, however, you will be asked to broaden your perspective: to view the goal refinement process as a district-wide effort and to recognize its effects upon district staff, community, and students.

You will be acting as education planners who have been asked to critique two quite disparate simulated planning efforts. As a result of your performing their analyses, comparing your responses with feedback, and reading instructional material you should:

1. become knowledgeable about some properties or characteristics of "effective planning";

2. be able to analyze critically the district planning procedures for properties that are exemplary, inadequate, or missing;

3. be able to relate certain district planning practices and procedures with the appropriate properties of "effective planning."

OVERVIEW OF MATERIALS

PART I - Introduction to district planning: consists of a table of general planning categories and properties, and a checklist to be used to refresh your memory on the content of the table. The activity is to be performed individually.

PART II - Introduction to district planning specifically for the goal refinement process: consists of simulated material in the form of a letter from a group of concerned citizens and a report from the Superintendent of the Las Maquinas Unified School District which outlines the district's operational scheme. Using the table from PART I, the planning effort is to be analyzed by filling out the appropriate response forms and comparing team answers with the feedback provided.

PART III - Simulated case study of the Los Jardines School District which has launched a goal refinement effort. It is to be analyzed by teams using the properties of "effective planning" outlined in PART I and applied in PART II. After this task is completed an analytic exercise is provided, the responses to which should be compared with the feedback and discussed by the entire group.

TO AID YOU IN GETTING THE

FEEL OF A PLANNER'S ROLE,

PLEASE BEGIN BY READING THE

FOLLOWING LETTER, THEN PROCEED

Milley Taint
1984 Computas Drive
Las Maquinas, Calif. 99999

May 19, 1971

Editor
Las Maquinas Recorder
P. O. Box 61
Las Maquinas, Calif. 99999

Dear Editor:

During the past six months my son and a number of his friends have been cutting their high school classes during the afternoon to pursue more exciting and, to them, more "meaningful," behavior. I have spoken with several parents who have had similar experiences with their youngsters. When confronted with our discoveries about their activity our children have countered with a number of reasons, excuses, lies, etc. The underlying substance of their answers, however, has been that the content of their courses is not "relevant." Neither are they able to "relate" to their teachers.

Looking back on my own experience I realize that school was never very exciting for me nor was I particularly motivated to study as I should have been. Never was I prompted to say, however, that we would be better off without education and that school was responsible for the miserable condition of the world, as my son has said to me.

Concerned about his scholastic lethargy and, naturally, his future, I was moved to discuss the matter with his teachers in order that something might be done to motivate my son and perhaps, indirectly, his peers. In my efforts to do this I met with resistance and lassitude at every level of school administration. From the classroom teacher through Counselors to Principals and, finally, the Superintendent's Office, I was told that these problems were either insoluble or could not be approached within the confines of their particular jobs. In short, I was given the bums' rush at every turn.

During conversations with teachers and administrators I received a variety of responses. Teacher responses to my queries ranged from students not knowing where they were going, except that they did not want to follow in the footsteps of their parents, to the fact that the district had not consulted with the student body in updating existing, or establishing new, curricula. A few administrators claimed that the problem lay with permissive child-rearing and that no visible scholastic solution was possible. Other administrators indicated that no broadly stated goals existed for the district such as might be translated into curricula which would provide a sense of direction for the student. At the Superintendent's Office I was shown innumerable charts and graphs depicting the unprecedented scholastic progress of the district's students. All my questions, however, were either evaded or answered with bureaucratic doubletalk.

What is to be done? If our school people do not realize what is going on with their charges, are the schools performing anything more than a daily baby-sitting service? More importantly, must we sacrifice a generation or two of students whose dominant life-style is little more than parasitic upon society until we realize that perhaps our schools are offering outdated curricula that are administered by ossified minds? As a taxpayer and local citizen I demand that emergency steps be taken to establish clear-cut programs, appealing both to parent and student alike, which will enable our children to attain some measure of happiness and productivity in the society of the future.

Milley Taint

HOW TO PROCEED

As a newly appointed district administrator you have been asked to draft a letter responding to Milley Taint's concerns. Your new responsibilities include the coordination of a (yet to begin) planning effort to develop and refine district goals. You are therefore in a position to respond directly to the challenge in her last statement.

For the next ten to fifteen minutes please list the major points you would make in a letter of response. It is suggested that you concentrate on steps that you would take in planning for the goal refinement process. These might best be listed in outline form (use the space below).

When you have finished, the coordinator will lead a brief discussion. After the discussion please study PART I and complete its exercise as directed.

Outline

PART I

District Planning

INSTRUCTIONAL PLANNING INVOLVES:

the identification and analysis of needs which schools must satisfy,

the specification of what students should learn from instruction,

the design of instructional programs, and,

the development of methods by which learning can be evaluated.

An instructional planning effort cannot be considered effective if it seeks to improve educational form and content but fails to focus upon relatively uniform administrative units to carry out systematic planning tasks and responsibilities. It is therefore important to devise or use existing organizational constructs through which to administer plans rationally. And, although school districts encompass a variety of characteristics such as size, philosophy, and cultural mores, their structure serves a very useful purpose in this respect.

Using school districts as a central focus, then, the process of instructional planning may be broken down into three overlapping categories:

organizational - the network of people required to provide information needed to perform certain decision making functions;

operational - those specific jobs or tasks which are performed to achieve the objectives of the organization; and,

management - the coordination of people and their tasks within the organization (or, the development and monitoring of guidelines for operating procedures and staff responsibilities).

For example, to accomplish the goal refinement process, a school district should direct itself to three questions:

I. ORGANIZATIONAL: TO DETERMINE THE ORGANIZATIONAL STRUCTURE, WHO WILL PROVIDE INFORMATION AND MAKE DECISIONS FOR THE GOAL REFINEMENT PROCESS?

Answer: *In refining goals, usually a variety of people must be involved to assure viable representation and realistic information.*

II. OPERATIONAL: TO DETERMINE OPERATIONAL PROCEDURES, WHAT JOBS AND TASKS MUST BE PERFORMED TO ASSURE THAT THE GOAL REFINEMENT PROCESS WORK WILL BE EFFECTIVE?

Answer: *In refining goals, the school district must determine the specific jobs and tasks which lead to usable curricular objectives.*

III. MANAGEMENT: TO INSURE EFFECTIVE MANAGEMENT OF THE OPERATION, WHO WILL COORDINATE THE ENTIRE PROCESS SO THAT IT WILL REMAIN RESPONSIVE YET EFFECTIVE?

Answer: *In refining goals, or in any planning effort, management personnel must establish guidelines and standards for the performance of tasks, and must monitor the entire process.*

To aid in the further understanding of district planning, a detailed breakdown of planning categories and their properties is provided in the following table.

PLEASE STUDY THEM AND PROCEED ACCORDING TO INSTRUCTIONS

Table of Planning Categories and Properties

CATEGORY I: ORGANIZATIONAL

PROPERTIES:

A. COMPOSITION: A planning body should be organized to include as many representatives of interested groups as is useful.

The representative planning body as a whole should provide information for decision making and should assist in the formation of policy. Members should include everyone from the superintendent to students to PTA mothers.

Representatives might also include persons from ethnic, professional, and political interest groups. And with high level administrative personnel in direct contact with community spokesmen there might be less chance of policy decisions becoming inapplicable and irrelevant to those they directly affect.

Warning! Overrepresentation might cause deliberations to become unwieldy. It is therefore necessary to keep the size of the planning body down to facilitate smooth operation while avoiding potential complaints or criticisms from unrepresented groups or individuals.

B. IMPLEMENTATION: The procedures of the planning body should be designed to be effective.

Deliberations of the planning body should be open to the public at large. This is required by law in the public schools and is designed to prevent policies from being dictated to the public by their representative body.

Subcommittees should be used to perform specific, long-term tasks. This helps eliminate the duplication of efforts and wasted time.

CATEGORY II: OPERATIONAL

PROPERTIES:

A. TASK ANALYSIS: A systematic analysis of tasks should be conducted to provide a basis upon which to determine staff competences.

If the goal refinement process is to be implemented, the entire process must be analyzed to determine the specific tasks required to attain the objectives of the process.

Also, for specific projects, it is necessary to assess the skills which available personnel have involving project planning, design and implementation. It is also necessary to differentiate among the requisite tasks involved in planning for the implementation of any process.

B. INFORMATION FILE: An ongoing information/data file should be established and continually updated.

Maintenance of an information/data file allows for the "prioritizing" of goals and objectives dealing with the planning process and the problems to be solved.

Information dealing with the planning process—task analysis data—should be included as well as information from constituents, student needs and desires, student achievement data, community needs and desires, community occupational and cultural information.

CATEGORY III: MANAGEMENT

PROPERTIES:

A. MANAGEMENT TEAM: A management group, with district-wide responsibilities, should be formed.

Such a group should organize decision alternatives for presentation to the at-large planning body, should establish criteria for judging alternative plans, and establish guidelines for project maintenance and evaluation.

B. RESPONSIBILITY: Staff competences based on task analysis information, should be determined, and responsibilities for individual tasks should be clearly assigned.

Clearly assigned responsibilities help promote accountability for task performance. This may be accomplished by developing procedural guidelines for all persons involved in decision making. A result of effectively delegated responsibility is that it prevents decision overload from occurring at high level administrative positions.

C. TRAINING: A formal or informal training program should be designed and instituted.

The content of training should be based upon the need for upgraded skills by staff members.

D. EVALUATION: Follow-up studies should be used as bases for further revision of plans.

These studies should include the periodic evaluation of the planning staff as well as the output of the plan itself.

CHECKLIST

The preceding table of planning categories and properties is by no means exhaustive; nevertheless it is of sufficient range to include most aspects of an effective instructional planning process.

To refresh your memory, and without referring back to the table of categories/properties unless absolutely necessary, please respond to the following items:

1. Please list the major planning categories used to outline effective instructional planning. _____

_____

_____

_____

2. Please list the planning properties which are involved in each of the planning categories.

I. _____ Category

Property A: _____

Property B: _____

II. _____ Category

Property A: _____

Property B: _____

III. _____ Category

Property A: _____

Property B: _____

Property C: _____

Property D: _____

When you have completed your responses, please check the table for comparison with your work. When you have done this, begin "AK" II.

PART II

District Planning for Goal Refinement

Goal refinement is perhaps the most important planning action taken by a school district. Its nature, breaking down general goals into indicators and specific curricular objectives, requires consensual agreement among those whom the process affects, both at the district level and within the school. The effective performance of the goal refinement process therefore depends upon good planning and a sound philosophy.

The planning properties previously listed are based upon the premise that decision making is best exercised when it includes, at least in part, the voices of those whom decisions affect. If this is not done, decision making lacks legitimacy. Robert M. Hutchins cites this difficulty when reflecting upon his administration at the University of Chicago.

> "It is one thing to get things done. It is another to make them last. I was interested in effecting permanent improvements in American education, not in keeping the University of Chicago in an uproar. I should have known that the existence of a large and embittered minority, which felt that fundamental alterations of the university and its program had been pushed through without consideration of its point of view, destined such alterations to endure only until the minority could muster the strength to become the majority."[1]

The arena of educational decision making is exceedingly public. Students, school staffs, as well as parents and other non-educators, have become committed to seeking representation, if not actual involvement, in decisions affecting the lives of student populations. And one of the simplest ways of aiding this commitment is to utilize community participation in the setting and refinement of goals. To provide for an effective process, staff must be trained in the necessary skills, and community input information must be continually updated, to stimulate revision of the substance of goal refinement. To manage such an operation, guidelines must be established which organize knowledge, competences, skills, and tasks into a smooth evolutionary progression which capitalizes upon flexibility rather than being balked by it. In short, participatory decision making is not advocated simply for the benefits of crisis reduction. Instead it is necessary for the implementation of forward looking educational programs which are a reflection of the rational recognition and assessment of the needs of the individual and the society of which he or she is a part.

Participatory decision making is necessary for the success of the goal refinement process. However, there are many examples to the contrary in the workday world. One such example follows, to help us focus on the problems involved in district planning, on the need for goal refinement, and on participatory decision making.

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[1]Robert M. Hutchins, Freedom, Education, and the Fund (New York: Meridian Books, 1956).

Instructions: Keeping in mind the planning categories and properties discussed in Part I, please read the two following documents. They represent a brief description of the planning and management efforts of a simulated school district and a letter from dissatisfied citizens. When you have completed your reading, proceed according to the instructions which follow.

Concerned Citizens Coalition
P.O. Box 71, Las Maquinas, California 99999

May 17, 1972

Superintendent of Schools
Las Maquinas Unified School District
Las Maquinas, California 99999

Dear Sir:

It has come to our attention that the good reputation of the schools in our community does not bear up under the close scrutiny of parents who are concerned with the quality of their childrens' education. For the past five years Annual Reports coming from your office have included data showing that our high school graduates do better at the state university than those from any other institution in this part of the state.

Superficially this speaks well for both the quality of our students and their teachers. However, the data supporting these claims have not included the size of the student sample. Because of this some curious parents have checked into the data which was used at the County Census Bureau and it was discovered that our high school, when compared with other schools in the county, has the lowest percentage of students entering a college program. Our attempts to determine the percentage who actually complete a four year program were not successful. Moreover, other data which you have used reflect that your Annual Reports are based upon rather spurious ground.

A recent survey conducted by the County Welfare and Attendance Office reveals that daily absenteeism from high school classes, for various reasons, averages as high as 25%. Reports from the County Medical Authority are also alarming in that they warn that much absenteeism is due to the use of narcotics both in and out of school. According to student statements, drugs are taken to alleviate boredom incurred in most of their classes. Student allegations range from school being "irrelevant" to their teachers suffering from "low blood pressure," "senility," or both.

Although youthful spokesmen may be prone to exaggerate, it appears that there exists some discrepancy between your publicized theory and our children's practice. It is suggested that a thorough study be made of curricular content in our high schools, and that performance criteria be set forth for the evaluation of teachers within the district. Moreover, it is suggested that a plan be set up to administer a more meaningful system of instruction within the schools and that student performance be more accurately evaluated.

This matter should warrant your immediate attention as a large portion of the community is now aware of the condition of our school system. Our group will attend the next School Board meeting and at that time will expect a considered reply to the suggestions mentioned herein.

Respectfully,

I.M. Nemesis, Chairman
Concerned Citizens Coalition

Las Maquinas Unified School District

Report on

THE STATE OF THE DISTRICT

Prepared by

The Superintendent of Schools,
Las Maquinas

May 31, 1971

Introduction

In recent months my office has received public and private criticism regarding the nature and function of our educational system in Las Maquinas. While I welcome the concern shown by our citizenry, it appears that many of the allegations are unfounded.

By way of establishing the issues under discussion I have prepared a brief summary of our efforts directed at answering the charges levelled at the administration of our schools with the hope that concerned citizens in Las Maquinas will be better able to understand both the substance and depth of the problems affecting us as well as the efforts which are being made to rectify them.

The pages which follow describe the procedures which are followed by school teachers and administrators, and my office, which serves as a coordinating center for all district activities. It is hoped that they will provide information for those who believe that little or nothing is being done to bring our district up to date in planning for the future. It is also hoped that this information will spur interested citizens to communicate to others our efforts to streamline the context and content of our curricula.

Horst Ironglove, Ph.D.
Superintendent of Schools
Las Maquinas Unified School District

The State of the District

Administration of the District

The Las Maquinas School District is administered along hierarchical organizational lines. The range of administrative responsibilities runs from the individual classroom teacher at the base to the Superintendent at the apex. Each and every decision at high levels of responsibility is divided into smaller decision units as it progresses down the organizational ladder.

As a result, there is a clearly defined area of decision making for each slot in the personnel hierarchy. Information which is gathered at the base of the organizational pyramid is passed on to a higher level for analysis, recommendations, and a policy decision. This method facilitates a smoothly running organization and provides training at various levels for personnel who, through experience, advance to increasingly higher levels within the decision-making structure. Experience within certain job areas, then, is the prime criterion for advancement, and expertise is a by-product of such a system.

Additionally, annual audits of operations, budgetary procedures, and financial position by appropriate subcommittees have consistently shown that our district is on sound economic ground. The recommendations arising from these annual reviews are forwarded to the School Board, thus enabling an elective body to make decisions on the alternatives reached by experts who have knowledge of budgetary matters.

Data Based Operation

To determine the areas of emphasis in which the district must concern itself there are periodic studies conducted by the Office of the Superintendent. Most of the work done as a result of this data gathering focuses upon the determination of needed physical facilities and staffing. The method used to arrive

at interim decisions is to consult data collected by the County Tax Assessor's Office which has on file information dealing with income, property holdings, occupational data, etc. This information is used to determine the physical capacity of the district to accommodate an ever-growing student population.

Additionally, data gleaned from other surveys are provided the district in order that rank order ratings may be given the achievement scores of college freshmen and sophomores. These data are melded with information gathered at the local level so as to provide the district statistical section with a profile of the college-bound high school graduate. The use of this profile is instrumental in gearing our curricula toward college or university learning so as to upgrade the quality of the high school student and provide broader opportunities for higher education.

In an attempt to serve the local community, three vocational education courses have been inaugurated at our high schools. Student interest in these courses has been so great, though, that enrollees have to be screened prior to registration to eliminate non-vocational-oriented students. The reason for this screening is that courses of this nature are very expensive to maintain in light of equipment and staffing expenditures.

Community Participation

One year ago attempts were made to include the public in a district goal construction operation. The result was increased confusion. Rather than accomplishing constructive work, certain groups within the community used the planning sessions as platforms from which to vent their own brand of educational philosophy. As a result, consensus was never reached and community participation was curtailed. Instead of direct community involvement in educational planning matters, we have reverted to the more usual form of representation which is exercised through elected school board members. Until we have some

assurance that direct community participation will be more effective, we will continue to rely on school board members for guidance.

Standardized Student Evaluation

A stringent student evaluation procedure is in effect for determining the qualifications of the district's students. Twice annually, at grades 1, 2, 5, 8, and 11, tests are administered to measure scholastic ability and achievement in reading, mathematics, social studies, and science.

These tests have been provided by a national test development firm which specializes in testing functional knowledge within specific subject areas. Results from the testing over the past five years show that school performance of our students has consistently been at or above the norms provided by the publisher. One the basis of these results it is safe to say that the Las Maquinas District offers high quality education to its students as compared with other competing districts from around the state.

Inservice Training

All teachers in the district are encouraged to take extension courses after school hours for the purpose of familiarization with recent developments in their academic fields. A fair response has been received from this urging which has produced apparent, though as yet unmeasurable, results in the quality and relevance of instruction for the district's students. The teaching staffs are becoming increasingly more interested in inservice training, though, as it allows them to receive additional salary increments for credits earned.

Uniformity of Curricula

The final word in an efficiently run organization is a high degree of uniformity. From uniformity there follows accountability in the form of job responsibility and, therefore, the assurance that each job within the school district

is being performed with a maximum degree of skill. A high degree of uniformity further permits predictability and thus the administration knows with confidence what is occurring in the classrooms.

Teaching and administrative staffs have uniform functions to perform on a district-wide basis. The method of instruction in the Las Maquinas District is such that in each classroom across the district, at a given grade level, the same subject is being taught at each given hour. More specifically, the content of each subject is regulated by supplying the teachers with standardized lesson outlines which guarantee that each student is receiving the same precise skills that will enable him to function effectively in the larger society as a whole.

Conclusion

The system outlined above, which includes effective organizational procedures, a data-based operation, standardized student instruction and evaluation, and inservice training for teachers, should provide the lay observer with information to better understand what is occurring at administrative and instructional levels within the Las Maquinas Unified School District. Finally, continued work is being done to upgrade the quality of teacher and student in response to the demands of a technological society.

Further inquiries into the operation and maintenance of our district's system, as well as suggestions for the solution of specific problems, may be addressed to the Office of the Superintendent. They will be given careful attention and will be answered as promptly as possible.

Instructions: Las Maquinas Analysis

On the next few pages are excerpts from three simulated documents in the first part of this module. After forming teams, select one person from each to serve as the recorder of team decisions on his or her response form. Then, proceed according to the following instructions:

- Detach the Table of Planning Categories and Properties from the notebook (pp. 153-157).

- Consulting the table when necessary, designate in the appropriate spaces on the response forms whether you believe the problem mentioned in each statement could have been prevented by use of an effective goal refinement effort with properties as listed in the table (i.e., determine whether the problems are applicable or inapplicable to the goal refinement process).

- If you believe that the problem in each statement is "applicable" to the goal refinement process, write the numerals of the categorie(s) and letter(s) of the property(ies) which might solve each implied problem. If more than one choice seems appropriate to you, mark your first and second choices.

As you proceed through the Las Maquinas analysis, suggested responses will be provided so that your responses may be carefully compared with an outside opinion. When you have completed the exercise, please continue according to instructions.

Las Maquinas Analysis (Suggested Responses)

1. "...the content of their courses is not 'relevant'" (p. 147) — Applicable I A

RATIONALE: TO A GREAT DEGREE, "RELEVANCE" IS DETERMINED BY DOMINANT VALUE PATTERNS IN THE COMMUNITY. THEREFORE, IF "RELEVANCE" IS OF PROMINENT CONCERT TO STUDENTS, THEN THEIR INTERESTS SHOULD BE REPRESENTED IN A PLANNING BODY. THUS THIS STATEMENT IS APPLICABLE TO THE GOAL REFINEMENT PROCESS. PROPERTY A FROM CATEGORY I WOULD BE MOST SUITABLE.

2.. "Neither are they able to 'relate' to their teachers" (p. 147) — Inapplicable

RATIONALE: THOUGH "RELATING" TO TEACHERS IS IMPORTANT, THIS PROBLEM CANNOT BE SOLVED BY PLANNING FOR THE GOAL REFINEMENT PROCESS. INSTEAD, ATTENTION WOULD NEED TO BE GIVEN ASSESSING INTERACTION SKILLS IN HIRING TEACHERS, COMPREHENSIVELY EVALUATING THESE SKILLS ON THE JOB, OR PROVIDING TRAINING IN INTERACTION SKILLS. IN OTHER WORDS, THIS PROBLEM IS ONE OF IMPLEMENTATION RATHER THAN PLANNING. THEREFORE, THE PROBLEM WOULD SEEM TO BE INAPPLICABLE TO THE GOAL REFINEMENT PROCESS.

3. "From the classroom teacher through Counselors to Principals and, finally, the Superintendents's Office, I was told that these problems were either insoluble or could not be approached within the confines of their particular jobs" (p. 147) — Applicable III B

RATIONALE: INABILITY TO RESPOND TO SPECIFIC PROBLEMS IS A RESULT OF TOO LITTLE DELEGATION OF RESPONSIBILITY. THE USE OF TASK ANALYSIS INFORMATION WOULD AID IN THE ASSIGNMENT OF SPECIFIC TASKS TO PERSONNEL WHO, THROUGH COMPETENCE OR TRAINING, MIGHT BE BETTER ABLE TO COPE WITH EMERGING PROBLEMS. THUS THIS STATEMENT WOULD BE APPLICABLE TO THE GOAL REFINEMENT PROCESS. PROPERTY B FROM CATEGORY III WOULD BE MOST SUITABLE.

4. "...the district had not consulted with the student body in updating existing, or establishing new, curricula" (p. 147) — Applicable I B or II B

RATIONALE: INCLUSION OF STUDENT REPRESENTATIVES IN PLANNING SESSIONS WOULD HELP PREVENT CURRICULA WHICH ARE OF NO INTEREST TO STUDENTS FROM BEING INSTITUTED. THUS THIS STATEMENT WOULD BE APPLICABLE TO THE GOAL REFINEMENT PROCESS. EITHER CATEGORY I'S PROPERTY A OR CATEGORY II'S PROPERTY B COULD BE CONSIDERED SUITABLE.

Response Form: Las Maquinas Analysis

Statement	Applicable to Goal Refinement Process	Inapplicable to Goal Refinement Process	Number of Category	Letter of Property
1. "...the content of their courses is not 'relevant'" (p. 147)	☐	☐		
2. "Neither are they able to 'relate' to their teachers" (p. 147)	☐	☐		
3. "From the classroom teacher through Counselors to Principals and, finally, the Superintendent's Office, I was told that these problems were either insoluble or could not be approached within the confines of their particular jobs" (p.147)	☐	☐		
4. "...the district had not consulted with the student body in updating existing, or establishing new, curricula" (p. 147)	☐	☐		

Instructions: *At this point, please refer to the suggested responses on the following page and compare your responses with them, giving particular attention to the rationales. When finished with your comparison, please continue with the exercise.*

Response Form: Las Maquinas Analysis

Statement	Applicable to Goal Refinement Process	Inapplicable to Goal Refinement Process	Number of Category	Letter of Property
5. "Other administrators indicated that no broadly stated goals existed for the district such as might be translated into curricula which would provide a sense of direction for the student" (p. 147)	☐	☐		
6. "...it was discovered that our high school, when compared with other schools in the county, has the lowest percentage of students entering a college program" (p.165)	☐	☐		
7. "Moreover, other data which you have used reflect that your Annual Reports are based upon rather spurious ground" (p. 165)	☐	☐		
8. "...daily absenteeism from high school classes, for various reasons, averages as high as 25%" (p. 165)	☐	☐		

Response Form: Las Maquinas Analysis

Statement	Applicable to Goal Refinement Process	Inapplicable to Goal Refinement Process	Number of Category	Letter of Property
9. "...drugs are taken to alleviate boredom incurred in most of their classes" (p. 165)	☐	☐		
10. "Student allegations range from their teachers suffering from 'low blood pressure,' 'senility,' or both" (p. 165)	☐	☐		
11. "It is suggested that...performance criteria be set forth for the evaluation of teachers within the district" (p. 165)	☐	☐		
12. "...it is suggested that a plan be set up to administer a more meaningful system of instruction within the schools and that student performance be more accurately evaluated" (p. 165)	☐	☐		

Response Form: Las Maquinas Analysis

	Applicable to Goal Refinement Process	Inapplicable to Goal Refinement Process	Number of Category	Letter of Property
13. "Experience within certain job areas...is the prime criterion for advancement, and expertise is a by-product of such a system" (p. 169)	☐	☐		
14. "Most of the work done as a result of...data gathering focuses upon the determination of needed physical facilities and staffing" (p. 169)	☐	☐		
15. "In an attempt to serve the local community, three vocational courses have been inaugurated at our high schools" (p. 170)	☐	☐		
16. "One year ago attempts were made to include the public in a district goal construction operation. Increased confusion was the result" (p. 170)	☐	☐		

Response Form: Las Maquinas Analysis

	Applicable to Goal Refinement Process	Inapplicable to Goal Refinement Process	Number of Category	Letter of Property
17. "The final word in an efficiently run organization is a high degree of uniformity. From uniformity there follows...the assurance that each job...is being performed to a maximum degree" (p. 171)	☐	☐		

INSTRUCTIONS: *Please check your responses with those provided on the following pages. If serious discrepancies exist, consult the coordinator.*

Las Maquinas Analysis (Suggested Responses)

5.	"Other administrators indicated that no broadly stated goals existed for the district such as might be translated into curricula which would provide a sense of direction for the student" (p. 147)	Applicable	I	A

RATIONALE: PLANNING FOR THE SETTING OF GOALS, WHICH PROVIDES THE BASIS FOR CURRICULA, IS CERTAINLY PART OF THE GOAL REFINEMENT PROCESS. AS SUCH, IT SHOULD INCLUDE STUDENT AND COMMUNITY INPUT. THUS THIS STATEMENT IS APPLICABLE TO THE GOAL REFINEMENT PROCESS. CATEGORY I'S PROPERTY A WOULD BE MOST SUITABLE.

6.	"...it was discovered that our high school, when compared with other schools in the county, has the lowest percentage of students entering a college program" (p. 165)	Applicable	III	D

RATIONALE: BECAUSE THIS CONDITION COULD BE REMEDIED BY ANALYZING FOLLOW-UP DATA PERTINENT TO COLLEGE ENTRY REQUIREMENTS, THUS AIDING PLANNING REVISION WHICH MIGHT PRODUCE BETTER RESULTS, THIS STATEMENT IS APPLICABLE, WITH THE PROBABLE PROPERTY BEING D FROM CATEGORY III.

7.	"Moreover, other data which you have used reflect that your Annual Reports are based upon rather spurious ground" (p. 165)	Applicable	II or III	B D

RATIONALE: THE NEED FOR PERTINENT DATA SOURCES REGARDING THE PROGRESS OF STUDENTS AND OTHER ELEMENTS OF PLANNING OUTCOMES NECESSITATES A BROAD DATA BASE AND THE POSSIBLE USE OF FOLLOW-UP STUDIES. THUS, USING EITHER CATEGORY II'S PROPERTY OR CATEGORY III'S PROPERTY D, THIS STATEMENT IS APPLICABLE TO THE GOAL REFINEMENT PROCESS.

8.	"...daily absenteeism from high school classes, for various reasons, averages as high as 25%" (p. 165)	Applicable	II	B

RATIONALE: THE USE OF INFORMATION FOCUSING ON STUDENT NEEDS SHOULD REFLECT ITSELF IN CURRICULA AND THUS HELP ELIMINATE THE SOURCE OF THE PROBLEM CITED IN THE STATEMENT. CATEGORY II'S PROPERTY B WOULD PROBABLY BE MOST SUITABLE FOR THIS PROBLEM.

9.	"...drugs are taken to alleviate boredom incurred in most of their classes" (p. 165)	Applicable	II	B

RATIONALE: THIS STATEMENT IS APPLICABLE BECAUSE EVEN THOUGH THE CONCLUSION MAY NOT BE WARRANTED, IF STUDENT NEEDS WERE PROPERLY ASSESSED AND CURRICULA MADE MORE REFLECTIVE OF THOSE NEEDS, THE PROBLEM OF BOREDOM MIGHT NOT EXIST TO SUCH A GREAT DEGREE. PROBABLY CATEGORY II'S PROPERTY B WOULD BEST SUIT THIS STATEMENT.

10.	"...student allegations range from their teachers suffering from 'low blood pressure,' 'senility,' or both" (p. 165)	Inapplicable		

RATIONALE: BECAUSE THESE ALLEGATIONS ARE A REACTION TO PERCEIVED INTERPERSONAL INADEQUACIES, THE REMEDY DOES NOT EXIST IN THE GOAL REFINEMENT PROCESS.

11.	"It is suggested that...performance criteria be set forth for the evaluation of teachers within the district" (p. 165)	Inapplicable		

RATIONALE: THIS ACTIVITY WOULD NOT COME UNDER THE RUBRIC OF PLANNING FOR THE GOAL REFINEMENT PROCESS. HOWEVER, IT COULD AID IN THE EFFECTIVE IMPLEMENTATION OF SUCH A PLAN.

12.	"...it is suggested that a plan be set up to administer a more meaningful system of instruction within the schools and that student performance be more accurately evaluated" (p. 165)	Applicable	III	A

RATIONALE: THIS IS A GENERAL STATEMENT OF THE INTENT OF THE GOAL REFINEMENT PROCESS. ALTHOUGH "MEANINGFUL" IS A VAGUE TERM, STUDENT AND COMMUNITY INPUT WOULD RENDER ANY PLANNING EFFORT MORE LEGITIMATE AND THIS LEGITIMACY WOULD PROBABLY BE REFLECTED IN THE EVALUATION RESULTS OF STUDENT PERFORMANCE. CATEGORY III'S PROPERTY A SEEMS THE MOST SUITABLE.

13.	"Experience within certain job areas ...is the prime criterion for advancement, and expertise is a by-product of such a system" (p. 169)	Applicable	III	B

RATIONALE: THERE IS LITTLE EVIDENCE OF ORGANIZATIONAL EFFICIENCY IN THIS STATEMENT, WHICH MEANS THAT IT MIGHT BE APPLICABLE TO THE GOAL REFINEMENT PROCESS. TO ASSUME THAT TENURE IN A SPECIFIC JOB WILL DETERMINE ONE'S COMPETENCE IN THAT JOB IS IGNORING ADDITIONAL DETERMINANTS AT THE COST OF ADMINISTERING A RIGID, INFLEXIBLE OPERATION. CLEAR ADMINISTRATIVE ASSIGNMENTS WITH EVALUATION OF JOB PERFORMANCES BASED UPON TASK ANALYSIS INFORMATION SHOULD BE CONSIDERED AT LEAST AS VALID A CRITERION FOR ADVANCEMENT AS TENURE. THUS CATEGORY III'S PROPERTY B SEEMS MOST SUITABLE.

14.	"Most of the work done is a result of...data gathering focused upon the determination of needed physical facilities and staffing" (p. 169)	Applicable	II	B

RATIONALE: THE CONTENT OF THESE DATA SHOULD BE BASED UPON STUDENT AND COMMUNITY DESIRES WHICH SHOULD FURTHER BE REFLECTED IN CURRICULA AND EQUIPMENT WHICH CATER BOTH TO INDIVIDUAL CAREER ASPIRATIONS AND SOCIETAL INSTITUTIONS. CATEGORY II'S PROPERTY B SEEMS MOST SUITABLE.

15.	"In an attempt to serve the local community, three vocational courses have been inaugurated at our high schools" (p. 170)	Applicable	II or I	B A

RATIONALE: DETERMINING THE EXTENT OF COURSE OFFERINGS SHOULD BE BASED ON DATA GATHERED FROM THE COMMUNITY AS WELL AS OUTSIDE SOURCES. THERE IS NO INDICATION OF THIS HAVING BEEN DONE. THUS EITHER CATEGORY II'S PROPERTY B, OR CATEGORY I'S PROPERTY A, WOULD BE SUITABLE.

16.	"One year ago attempts were made to include the public in a district goal construction operation. The result was increased confusion" (p. 170)	Applicable	I	A

RATIONALE: THIS STATEMENT IS APPLICABLE TO THE GOAL REFINEMENT PROCESS, BECAUSE CARE SHOULD BE TAKEN TO INCLUDE IN A PLANNING BODY A SUFFICIENT NUMBER OF REPRESENTATIVES WHO UNDERSTAND THEIR RESPONSIBILITIES TO THE DISTRICT AND ITS STUDENTS. IF PUBLIC PARTICIPATION RESULTS IN CONFUSION, THE SOLUTION LIES NOT IN CURTAILING THAT PARTICIPATION BUT IN RENDERING REPRESENTATIVES ACCOUNTABLE FOR THEIR ACTIONS. CATEGORY I'S PROPERTY A WOULD SEEM THE MOST SUITABLE FOR THIS PROBLEM.

17.	"The final word in an efficiently run organization is a high degree of uniformity. From uniformity there follows...the assurance that each job...is being performed with a maximum degree of skill" (p. 171)	Applicable	III	B

RATIONALE: MORE ACCURATE INFORMATION REGARDING STAFF COMPETENCES IS REQUIRED THAN MERE SUPERFICIAL EVIDENCE OF UNIFORMITY. BY USING TASK ANALYSIS INFORMATION, ADMINISTRATORS ARE BETTER ABLE TO REGULATE THE QUALITY OF WORK OUTPUT, RATHER THAN BY ADHERING TO THE STRUCTURAL CRITERION OF BUREAUCRATIC RESPONSIBILITY. CATEGORY III'S PROPERTY B SEEMS MOST SUITABLE.

INSTRUCTIONS

The coordinator will now direct a group discussion.

PART III

Instructions

Keeping in mind the planning properties as outlined in PART I, please read the following case study of a planning and management effort focusing upon the goal refinement process. When you have completed your reading, proceed according to the instructions that follow.

Simulated Case Study

General Information

The Los Jardines School District serves an incorporated population of 140,000. Its large, urban nature is reflected in the fact that its civic center lies fifteen miles east of the epicenter of the greater South City metropolitan area. Its student population runs roughly 35,000 in 42 schools. The teaching and administrative staff numbers 2,200. The per annum cost per pupil is $731 and the assessed valuation is $12,136 per pupil. The median income of people living in the district is $4,250 per year. The racial composition of the district is 45% white, 30% black, 15% Chicano, 5% Asian, with the remaining 5% a mixture of recent immigrants from myriad cultures around the world.

The Los Jardines District has for three years been engaged in district-wide planning and management of the goal refinement process. It first became involved in this effort as a result of participation in a statewide pilot project on Planning, Programming, and Budgeting. The results of the initial experience provided a ground base and stimulus for subsequent work in implementing a district-wide goal refinement effort.

Community Involvement

Three years ago the District Superintendent and two Curricular Directors set about complying with a state request that the Los Jardines District be used as a laboratory location for the implementation of the goal refinement process. Their first activity centered around the formation of a Planning Task Force not to exceed fifty, in order to avoid unwieldy decision making. In order that the city's diverse population could be served to a maximum extent it was decided by the School Board and the Superintendent that the Task Force should include as many community representatives as possible without mitigating the degree of experience and expertise which would be required for such an undertaking.

Interviews were conducted, by a volunteer committee composed of three School Board members, two parents, the Superintendent, and his Curricular Directors, to determine the membership of the Task Force. The Task Force was to be the final decision-making body and its condidates were chosen to represent as many philosophical, cultural, and ethnic backgrounds as could be collected. In all, 42 people were chosen for its membership. It was composed of five persons from each of the "minority" ethnic groupings (black, Chicano, Asian) and five at-large representatives from the district's student population. Five members were chosen from the new radically-oriented Community of American Teachers union (CAT), and five members of the generally moderate Federation of American Teachers union (FAT) were also chosen. Four non-union teachers and five school administrators were selected to fill out the Task Force membership along with the Superintendent and his Curriculum Directors.

District Goals

At their organization meeting, the newly appointed Task Force resolved to hold future deliberations in gatherings which were open to the public. A 14-member subcommittee was also elected to review existing district goals or develop new ones.

The Goals Subcommittee, composed of teachers, administrators, students, and parents, immediately set out to assess the varied educational needs of the district's population. In doing this, the subcommittee established an information/data file which described the population being served and set forth the general desires of various segments of ethnic and professional groups within the district. The file also contained information dealing with existing and emerging occupations, the demand for which would put pressure on curricular and administrative resources within the district. Based on this data, the Goals Subcommittee made recommendations for alternative planning procedures to the Planning Task Force.

A Planning Subcommittee was formed to deal with job performance requirements within the scope of district-wide planning. This group was composed of the Superintendent, his Curricular Directors, and a number of administrators and teachers whose experience and talents would lend to a large scale planning effort. This subcommittee's duties dealt specifically with determining the nature and function of tasks required for implementing the goal refinement process, establishing training guidelines for its implementation, and determining the extent of curricular resources and services necessary for establishing an ongoing training program.

The outcome of the Planning Subcommittee's work has become the heart of the Los Jardines goal refinement effort. The first portion of its job centered around determining the nature and function of tasks required for implementing the process. From the data/information file on district personnel the subcommittee discovered the existing state of knowledge and skills which could be used to supplement a training program for a district-wide goal refinement effort. Additionally, it discovered which positions in the administrative hierarchy were already responsible for performing tasks and duties which are included in the goal refinement process. In contrast to this information, the subcommittee conducted a job and task analysis to determine exactly who was performing these tasks regardless of the duties designated by organizational responsibilities.

Its primary interest was to determine first the nature of the existing decision-making structure, then to determine which skills would eventually have to be taught in a future training program.

Existing Refinement Efforts

It was found that, in some schools, administrators were already refining goals into increasingly specific statements of objectives. And it was also discovered that many of these objectives were being screened against predetermined criteria which would illustrate their adequacy for certain curricular programs in certain schools.

For instance, in one high school the secretary to the principal screened individual curricular objectives on the basis of whether they prescribed student behavior, whether course content was indicated, and whether they could be effectively evaluated. In short, the secretary possessed a considerable number of skills which provided her with the knowledge to make decisions regarding the "guidance" of specific objectives.

In another school, a student-faculty committee screened sets of curricular objectives and course subject matter to determine their "relevance" to the present and future needs of students. This committee was also responsible for judging whether sets of objectives were related to the overall school goal and whether they were compatible with the aspirations of students, parents, educators, curricular experts, and their view of the prevailing community philosophy. Decisions regarding the "relevance" of sets of objectives were in this case made by a committee.

In yet another school a P.T.A. subcommittee assumed the responsibility for determining whether refined objectives were practical in view of organizational capabilities (i.e., physical facilities and monetary resources), as well as judging whether they would have "negative social impact" and if they represented adequate coverage, not only of subject matter but of "affective" and "cognitive" levels.

In the majority of Los Jardines' schools, however, there was little evidence of conscious goal refining. Planning, if any, was done by individual teachers who had little or no knowledge of either the setting of goals, the writing of objectives, or the screening of objectives through predetermined criteria for adequacy.

Implementation of the Program

The implementation stage of the Los Jardines operation began six months after the start of the project. It was initiated with the creation of a part-time Management and Evaluation Team which would care for the maintenance and adjustment of the district plan for the goal refinement process. This team, composed of the Superintendent, two statistical evaluators, and a staff of six administrators, began by integrating information on population needs and job opportunities in light of area manpower plans and time and budget constraints. All of its decisions and recommendations were ultimately subject to approval by the Planning Task Force.

With this information an interim plan was drafted for providing training for persons whose existing knowledge and interest in district-wide planning qualified them for future work in planning in a variety of curricular areas. With the goal refinement process as a central focus, classes were set up to train planners in the mechanical elements of the process as they applied to each of four curricular areas: the Social Sciences, Humanities, Natural Sciences, and Industrial Arts.

Training Difficulties

It was discovered after the first class meeting that trainees were hesitant to submit to a plan which, in some curricular areas, emphasized one dominant cultural ethic over another. This was particularly true in the Social Sciences and Humanities. An emergency meeting of the Planning Task Force was held and it was decided that although the best interests of the district might be served by planning for a unitary ethical standard that would benefit society as a whole, it was totally infeasible to pursue such a course if the diverse interests of culturally different people within that district could not be satisfied.

Revised Plan

One of the guiding principles since the project's inception had been maximum feasible citizen participation. Consensual agreement on this point had ruled out a number of potential administrative alternatives. Such possible arrangements as a high level administrative committee doing everything, having specially designated teachers do all the planning, or hiring outside consultants to perform planning duties were all dismissed as courses of action at the outset. However, the way that the plan had evolved was that the content and context of the training program had been administered by a very few high level people. Following this first impasse, a compromise was reached by the Planning Task Force which created an arrangement that seemed to satisfy all those concerned.

An alternate plan was approved which decentralized the planning process to the point where personnel would be trained, and elements of goal refinement managed and evaluated, at the district level but the content of specific curricular objectives would be determined by committees at the school level whose personnel were accountable to the respective principals. The result was a hierarchal structure formed around existing personnel positions and requiring little effort to maintain, save for a few minor adjustments of previously delegated organizational responsibilities. From the Office of the Superintenent and the Management and Evaluation Team came directives which guided even the part-time faculty member, involved in the refinement effort at the individual school level, in his decisions on the method of goal refinement planning. The content of curricular planning, as long as it related in a deductive manner to the general goals of the district, was left entirely up to curricular committee members at the grass-roots level.

As a result the previous condition of the planning process, where it had existed at all, was improved. No longer were haphazard decisions made by persons unaccountable to anything or anyone but their own consciences. In special cases such as the ones mentioned above, the secretary to the principal and the P.T.A. were offered opportunities to participate in their local goal refinement work after a short period of training.

Final Plan

TRAINING FOR THE MECHANICS OF THE GOAL REFINEMENT PROCESS WAS REDESIGNED TO FOCUS ON REFINING GOALS INTO CURRICULAR OBJECTIVES, SCREENING FOR THEIR GUIDANCE, RELEVANCE, AND FEASIBILITY, SCREENING SETS OF OBJECTIVES, AND EVALUATING CURRICULAR PROGRAMS AS THEY ARE FORMED BY REFINED OBJECTIVES.

The Los Jardines District was fortunate in having available the financial resources and enough interested faculty and administrators who were willing to commit themselves to a permanent project of this type. Nevertheless, the Management and Evaluation Team was compelled to hire additional personnel in the field of accounting, and a full-time executive clerk was employed to keep track of continual changes and curricular revisions for the district's 42 schools. The training program was gradually phased out to the point where replacement personnel are now being trained on the job by their fellow committee members.

The goal refinement process has resulted in curricular objectives which are satisfactory to most persons involved. Evaluation procedures for the curricular objectives were designed by the Management and Evaluation Team, and evaluation of instructional programs is rapidly becoming standardized as to method and types of data collected. Feedback from individual schools has prompted an increased exchange of ideas among schools regarding their respective instructional methods. However, individual schools will have the responsibility for evaluating internal teaching-learning activities. In addition, follow-up studies are being conducted by the district to evaluate the employment successes of the district's high school graduates. Findings from these studies and the results of community feedback yield information which speaks well for the Los Jardines goal refinement effort.

Prognosis

If present trends continue within the Los Jardines District, it appears that centralized-decentralized planning may become the model for urban area school planning in the future. The district's goal refinement work, dealing specifically with overall general goals which are articulated by a large population diverse in ethnic origin, reflects broad philosophical values intrinsic to many social traditions. This necessitates the implementation of a process which centers on intra-district decentralization. For example, schools which have a preponderance of one ethnic population over another reflect the dominant curricular philosophy and substance of that particular student population. Although planning is centrally administered the substance of the plan's segments are diverse enough to avoid the preponderance of one cultural philosophy over another. At this point the updating of information on changing community attitudes and composition, and acting upon this new information, is the challenge facing Los Jardines and all districts of its kind.

Instructions: Los Jardines Analysis

You are now to analyze the case study which you have just read in terms of "effective" planning. Work as individuals. Then, as a team, direct the team recorder to enter team decisions on his or her response form. The recorder's task is to obtain an analysis and rating that best conforms to the judgments of his or her team. When you have completed the exercise, please continue no further. When each team has finished, the coordinator will direct the entire group through a feedback exercise so that you may compare your responses with those provided.

Response Form: Los Jardines Analysis

In analyzing the Los Jardines District goal refinement planning effort, please answer these questions and, to rate effectiveness, circle the appropriate numbers.

1. What is the composition of the planning body as a whole?

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_____

_____

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Is it adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

_____

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2. Referring to the implemented goal refinement effort, in what ways are the working procedures designed to be effective?

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_____

CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETE
☐	1	2	3	4	5	6	7

a. Are they adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

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3. What type of legitimating "check" is evident for the review of planning decisions?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Is it adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

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4. What is done to determine the scope of tasks involved both in planning for the goal refinement process and within the process itself?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Are these activities adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

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5. What type of data base has been established (what information is collected and used)?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Is it appropriate in terms of what you assume to be "effective" planning?

b. Is it adequate in terms of what you assume to be "effective" planning?

c. If you checked 5 or below on either question, please explain why and designate which response applies to each question.

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6. By what means are the various elements and activities of the planning/goal refinement effort coordinated?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Is it adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

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7. What provisions are made for the determination of available staff competences? What provisions are made for the assignment of responsibilities for individual tasks?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Are these provisions adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

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8. What sort of provisions for training are present for those staff members who require additional planning knowledge?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Are these adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below, please explain why.

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9. What sort of provisions are present for the evaluation and upgrading of planning procedures?

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CANNOT TELL	NOT AT ALL			MODERATELY			COMPLETELY
☐	1	2	3	4	5	6	7

a. Are they adequate in terms of what you assume to be "effective" planning?

b. If you checked 5 or below please explain why.

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Instructions: *Please wait until the coordinator directs you to continue.*

Coordinator-Led Feedback

Los Jardines Analysis

Feedback - Coordinator Led

Los Jardines Analysis (Suggested Responses)

1. The planning body (Planning Task Force) is composed of representatives from various non-professional segments of the community -- students, ethnic minorities, parents -- as well as professional administrators and staff members. It is also of manageable size. In terms of effectiveness it would rate above 5.

2. Deliberations of the Task Force are open to the public. Subcommittees are used for long-term tasks. In terms of effectiveness the procedures would rate above 5.

3. The Task Force makes final policy decisions by choosing among alternatives presented by subcommittees and management. Also, its meetings are open to the public. In terms of effectiveness this would rate above 5.

4. A job and task analysis has been conducted by the Planning Subcommittee. In terms of effectiveness this would rate above 5.

5. The file includes information on cultural and professional needs, occupational needs, and task analysis information. Follow-up data includes information on graduate mobility, teacher-administrator assessments at the school level, and student achievement data. In terms of appropriateness this would rate above 5. In terms of adequacy it would also rate above 5, but although it appears adequate, remember that the intensive collection and analysis of data is never finished. Data may be used to support any hypothesis. Therefore mistaken notions, which are manifested in planning, necessitate continual assessment and revision.

6. School-level committees, accountable to their principals, determine specific curricular objectives, with guiding directives from the Superintendent and the Management and Evaluation Team. In terms of effectiveness this would rate below 5, because it is not clear who is responsible for assuring that tasks are carried out. Each person must apparently be committed and highly motivated to keep the process going. This is effective if each component provides assistance and support for every other. However, it may not be realistic and provision should be made for alternate plans if momentum wanes or motivation fades.

7. Staff competences are determined by information collected and maintained in the information/data file. Responsibilities for task performance belong to those designated. However, each component of the organization requires assistance and support from every other in order that a continuous effort may be sustained. In terms of effectiveness this would rate at

5 or below, because it is conceivable that individual commitments to the project could break down. This could put unbearable strain on the already overburdened Management/Evaluation Team and could bring the project to al halt unless contingency plans are on the drawing board.

8. Formal training occurs at the "centralized" district level. On-the-job training occurs at the "decentralized" local level. In terms of effectiveness this would rate well below 5. If training is performed by the local subcommittee members themselves, future work output may reflect rigid and uniform value structures. Although cost-effective, this procedure sometimes fosters apathy and inflexibility. Therefore some provision for formal training at the local level is needed.

9, The Management/Evaluation Team establishes goal refinement procedures. Schools evaluate internal teaching-learning activities. Follow-up studies are conducted at the district level. There is no mention of "upgrading," however. Therefore these provisions rate below 5 in terms of effectiveness. There seems to be no assurance that evaluations of local internal teaching-learning activities reach back to the district level. If this is the case, little district-wide "upgrading" could occur.

Appendix

SUMMARY STATEMENT, GLOSSARY, AND BIBLIOGRAPHY

SUMMARY STATEMENT

The training unit you have just completed deals with various elements of the goal refinement process. The process has been dealt with internally: viewing the nature of the process itself. For a more complete understanding of the process, it may help to view it from a different vantage point--from an external view. To aid in this "external" view, goal refinement will be defined in two ways: as a stage of evaluation and as an input for evaluation.

As a Stage of Evaluation

The goal refinement process requires making choices among alternatives (e.g., among the variety of potential goals, objectives, cognitive levels, value judgments, etc.). In order to make rational choices, relevant information and data are essential.

All planning and evaluation processes (whether they be analyzing problems, choosing goals, deriving objectives, analyzing curricular alternatives, assessing progress, or evaluating outcomes) have at least one thing in common. With each, school planners wish to determine the relative worth, or value, of something.

The purpose of evaluation is to determine relative worth among alternatives. The process of evaluation includes: "...determining the kinds of decisions that have to be made; selecting, collecting, and analyzing information needed, and reporting this information to decision makers." [1]

This definition of evaluation stresses the importance of information in helping decision makers choose among competing alternatives. It is applicable to the goal refinement process because it emphasizes the use of information by which to make value decisions concerning the relative worth of alternative courses of action. Goal refinement may be defined as an evaluation process as may all other aspects of planning, implementing, and evaluating the instructional program. Each process depends on the use of information in order to help decision makers determine the relative worth among competing alternatives.

As an Input for Evaluation

The goal refinement process should produce an outcome (sets of objectives) that is useful to school planners in at least three ways. Module One of this training unit listed a variety of uses of objectives (aside from the communication benefits of the process itself).

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[1] Center for the Study of Evaluation, University of California, Los Angeles.

- The direction that objectives provide in analyzing (or evaluating) the adequacy of alternative curricular materials. Objectives (as well as other district generated information concerning preferred learning environments and resources and constraints) are the primary information sources used to analyze potential curricular programs.

- The use of objectives as products of the goal refinement process. Goal refinement is a process that is part of a larger planning process commonly referred to as needs assessment. Goal refinement produces objectives that are necessary for the successful completion of the two tasks, defined as Needs Assessment and Program Selection in Table 1 (p. 205). It presents a listing of primary tasks to be performed. The assessment of student performance on selected goals, and determining discrepancies between existing and desired states, are tasks for which the specifying objectives and establishing criteria for assessment provides valuable information.

  How would the specification of objectives and the establishment of criteria be used in this case? Determining the discrepancy between existing and desired states by assessment of student performance helps identify major problems for the district. It is usually not possible to assess student performance on the basis of broad goals. Adequacy of an assessment will depend on the extent to which goals have been refined into objectives that permit observation and/or measurement.

- Another important use of objectives is for outcome evaluation. Outcome evaluation is primarily concerned with determining the worth of an implemented curricular program. The school may be interested in making decisions concerning the continuation of a program, or its extension to other schools in the district. If a selected program, which could be one that is designed within the district, has been implemented as intended, evaluation of the student attainment of objectives provides necessary information as to the effectiveness of the program.

  Outcome evaluation also provides information concerning variations in achievement among students. This information helps the teacher know students as individuals, provides a better basis for feedback to students, and helps plan for the future with students.

Table 1

INSTRUCTIONAL PLANNING

Needs Assessment	Program Selection
• selecting goals	• analyzing curricular alternatives
• identifying problems	• decision making to select, modify, or create new programs
• assessing student performance on selected goals	• planning implementation
• determining discrepancies between existing and desired states	
• determining priorities among existing discrepancies for the purpose of selecting those that need solutions	

Information about how well students as a group and individual students fared on objectives will help planners decide on the relative importance of objectives and the adequacy of priorities placed on them. If certain objectives are not being attained by a number of students, it may be that these objectives need to be eliminated, that additional resources need to be committed, or that different learning experiences and/or curricular materials need to be introduced.

IN SUMMARY THEN, THE USE OF OBJECTIVES FOR OUTCOME EVALUATION INCLUDES DETERMINING THE WORTH OF CURRICULAR PROGRAMS, PROVIDING BETTER INFORMATION ABOUT STUDENTS, AND SUBSEQUENTLY RECONSIDERING PRIORITIES.

Serendipity

"An apparent aptitude for making fortunate discoveries accidentally."[2]

The likelihood of perfect congruence between the intended outcomes and the actual outcomes is small. This is partly because the likelihood of perfect congruence between the intended transactions between teachers and students, and the actual transactions, is also small.

Any instructional program that involves students and teachers will encounter many unanticipated events and cutcomes. Since they are unplanned, teachers will need to make immediate decisions concerning their usefulness and their priority over planned events and outcomes. In situations such as this, intuition, spontaneity, and a degree of freedom are required to take advantage of unplanned, but worthwhile, situations.

Only a brief, general introduction to evaluation, and the uses of objectives for evaluation, has been presented here. A more comprehensive presentation concerning the nature, the role, and the processes of educational evaluation is the subject of subsequent training units. The tasks and related competences needed by school planners in the evaluation of instructional programs and of instructional outcomes will receive primary emphasis in those units.

[2]Websters New World Dictionary of the American Language, College Edition, (New York: World Publishing Company, 1957).

GLOSSARY

Affective Objectives - Objectives which emphasize a feeling, an emotion, or a degree of acceptance or rejection.

Cognitive Objectives - Objectives which emphasize remembering or producing something which has presumably been learned. They may vary from simple recall of material learned to highly original and creative ways of combining, synthesizing, or evaluating new ideas and materials.

Criterion - Standard or bench mark by which a judgment of something can be formed.

Curricular Objectives - Objectives that result from the refinement of goals. They are statements which describe intended end-of-course outcomes. They should indicate the student behavior and the curricular area in which the behavior is to occur, and they must also provide a basis for evaluating student achievement of the behavior.

Data Base - A body of information collected at any point in time. Used for describing the existing state of affairs and for making decisions concerning needed effort.

Feasibility - A criterion used to judge whether an objective has a good probability of being achieved, is practical in view of organizational capacities, limits, and constraints, and is desirable in terms of foreseeable social impact.

Goal - A fairly general statement of aims, usually long-range in terms of time.

Goal Indicator - Behavior which represents or stands for a goal. Long-range in terms of time, but more specific than goals as to observable behavior.

Goal Refinement Process - A process by which goals are broken down into increasingly specific statements of intended student learning.

Guidance - A criterion used to judge whether an objective provides sufficient direction for users. An objective passes the guidance criterion if it clearly indicates desired student behavior, indicates the curricular area in which the behavior is to occur, and is specific enough to guide the design of learning experiences, the creation of evaluation methods, or the selection of curricular materials.

Instructional Objectives - Objectives that result from the refinement of goals. They are more specific than curricular objectives and often describe intended student learning outcomes as a result of a single day, or a relatively brief unit of study.

Relevance - A criterion used to judge whether an objective is meaningful to the learner, related to the educational goal from which it is derived, and desirable in terms of the present and future expectations of the school and its related groups.

Sets of curricular objectives - The result of refining goals and goal indicators to the point where a fairly complete list of the more important learning outcomes within a curricular area has been specified. The set functions as a guideline in selecting, designing, or revising curricular programs and planning evaluation.

Task Analysis - The process of breaking down a relatively complex job into its various sub-tasks. The definition often includes the determination of the availability of competences for performing the tasks.

Taxonomy - A system of classification, e.g., classifying educational *behavior* into cognitive or affective types.

Affective	Cognitive
RECEIVING	KNOWLEDGE
RESPONDING	COMPREHENSION
VALUING	APPLICATION
ORGANIZATION	ANALYSIS
CHARACTERIZATION BY VALUE OR VALUE COMPLEX	SYNTHESIS
	EVALUATION

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GOAL STATEMENT

SINCE ALL BEINGS ON PLANIT DEPEND ON THE AVAILABILITY OF PERSIMMONS FOR THEIR VERY SURVIVAL, IT IS IMPERATIVE THAT THE PUBLIC SCHOOLS TRAIN ALL STUDENTS IN THE NECESSARY UNDERSTANDINGS, ABILITIES, AND ATTITUDES FOR THE PRODUCTION AND RATIONING OF PERSIMMONS.

STUDENTS WILL ILLUSTRATE THROUGH PANTOMIME OR DRAWINGS WHAT WOULD HAPPEN TO PLANITIANS SHOULD THEY REFUSE TO ABIDE BY THE RATIONING RESTRICTIONS.

STUDENTS WILL BE WILLING TO COMPLY WITH THE PPBS RATIONING RESTRICTIONS, EATING ONLY FOUR PERSIMMONS DAILY.

STUDENTS WILL BE ABLE TO DEMONSTRATE THROUGH PANTOMIME WHY THE PPBS WAS INITIATED AND WHAT WOULD HAVE HAPPENED HAD THE PPBS NOT BEEN IMPLEMENTED.

STUDENTS WILL ACQUIRE AN UNDERSTANDING AND APPRECIATION OF THE PLANITIAN PERSIMMON BALANCE SYSTEM (PPBS) SO THAT THEY WILL ACCEPT THE SYSTEM AND COMPLY WITH ITS REGULATIONS.

ALL STUDENTS WILL BE ABLE TO PERFORM PROPERLY ALL THE AGRICULTURAL SKILLS NECESSARY FOR PLANTING, CULTIVATING AND HARVESTING PERSIMMON TREES.

STUDENTS WILL BE ABLE TO PERFORM ACCURATELY THOSE COMPUTATIONAL SKILLS REQUIRED OF ALL WORKING CLASS PLANITIANS BY THE PPBS, I.E., WILL BE ABLE TO COUNT FROM ONE TO FOUR PERSIMMONS WITHOUT ERROR.

STUDENTS WILL BE ABLE TO DETERMINE WHETHER ROWS OF PERSIMMON TREES ARE RECEIVING ADEQUATE AMOUNTS OF WATER; AND, USING THE APPROPRIATE TOOLS AND EQUIPMENT, WILL BE ABLE TO CONSTRUCT DURABLE IRRIGATION CANALS SO AS TO PROPERLY DISTRIBUTE WATER TO THE TREES WHEN NECESSARY.

STUDENTS WILL BE ABLE TO COLLECT PERSIMMON SEEDS AND PERFORM ALL THE STEPS NECESSARY FOR GROWING AND PLANTING PERSIMMON SEEDLINGS.

STUDENTS WILL BE ABLE TO DETERMINE WHETHER A PERSIMMON IS RIPE, AND WILL HARVEST ONLY RIPE FRUITS.

STUDENTS WILL BE ABLE TO IDENTIFY, LOCATE, AND CAREFULLY REMOVE BY HAND ALL INSECTS, SUCH AS THE PLANIWORM, SIMMONPILLAR, AND PERMITE, THAT PROVE HARMFUL TO THE GROWTH OF PERSIMMONS.

STUDENTS WILL BE ABLE TO DETERMINE WHETHER PERSIMMON TREES ARE RECEIVING ADEQUATE AMOUNTS OF FERTILIZER; AND, USING APPROPRIATE TOOLS AND CRATER-DUST SOIL REPLENISHERS, WILL BE ABLE TO CULTIVATE AND FERTILIZE THE SOIL AROUND THOSE TREES THAT NEED IT.

STUDENTS WILL BE ABLE TO PERFORM, WHEN APPROPRIATE, ALL EXERCISE/DIETARY PROCEDURES FOR THE MAINTENANCE OF PROPER WEIGHT LEVELS.

THE STUDENTS WILL BE ABLE TO DEMONSTRATE THROUGH PANTOMIME OR DRAWINGS THE IMPORTANCE OF PLANIT'S ROLE IN THE INTERPLANETARY ORGANIZATION FOR PEACE.

STUDENTS WILL BE ABLE TO RECITE, WITH NO HESITATION, THE FIRST AND LAST NAMES AND MIDDLE INITIALS OF THE FOUR INTERPLANETARY SPECIALISTS WHO DEVISED THE PERSIMMON RATIONING SYSTEM (PPTS) 500 YEARS AGO.

STUDENTS WILL APPRECIATE THE CONTRIBUTION ARITHMETIC HAS MADE TO THE PPTS.

STUDENTS WILL HAVE THE UNDERSTANDINGS AND ABILITIES TO DEVELOP AND MAINTAIN THE NECESSARY STATE OF HEALTH AND PHYSICAL FITNESS TO PERFORM THE ACTIVITIES REQUIRED OF AGRICULTURAL WORKERS.

STUDENTS WILL BE ABLE TO PERFORM ALL TRADITIONAL PERSIMMAS DAY DANCES.

STUDENTS WILL DEVELOP THE PROPER COORDINATION, BALANCE, POISE, FLEXIBILITY, ENDURANCE, AND MUSCULAR STRENGTH REQUIRED OF ALL PLANITIAN AGRICULTURAL WORKERS.

STUDENTS WILL BE ABLE TO PERFORM ALL ACTIONS NECESSARY TO INCREASE THE STRETCHABILITY OF THEIR ARMS SO AS TO INCREASE THEIR EFFICIENCY AS PERSIMMON PICKERS.

TWENTY-FIVE PERCENT OF THE GRADUATES WILL HAVE DEVELOPED THEIR VOCAL CHORDS TO THE POINT WHERE THEY ARE ELIGIBLE TO SING IN KING NALP'S CHORALE.

STUDENTS WILL BE ABLE TO LEAD AND PARTICIPATE IN THE TRADITIONAL PERSIMMON DISTRIBUTION RELAY CALLED "ONE PERSIMMON, TWO PERSIMMON, THREE PERSIMMON, FOUR."

STUDENTS WILL BE ABLE TO ROLL OVER, BARK, AND SHAKE HANDS WHEN IN THE PRESENCE OF THE KING OR THE KING'S OFFICIALS.

STUDENTS WILL BE ABLE TO RECITE ALL PUNITIVE LAWS PERTAINING TO PPRS OFFENDERS.

STUDENTS WILL BE ABLE TO DESCRIBE THE FIVE DISTINGUISHING PHYSICAL CHARACTERISTICS OF THE SIMMONPILLAR, THE PLANITWORM, AND THE PERMITE, IN EXACTLY 10 MINUTES WITH NO ERRORS.

STUDENTS WILL BE ABLE TO PREPARE THE FOLLOWING RECIPES INVENTED BY KING NALP: PERSIMMON PARMESAN, PERSIMMON PERSNICKITY, PUREE DE PERSIMMON, AND PERSIMMON PORRIDGE HOT, PERSIMMON PORRIDGE COLD.

STUDENTS WILL DEVELOP THE HABIT OF BOWING SIX TIMES TO THE LEFT AND SEVEN AND ONE-HALF TIMES TO THE RIGHT WHILE SINGING "LALA SAVE THE PERSIMMON," AND "THE NALPIAN CHANT" BEFORE EACH WORKING DAY.

STUDENTS WILL BE ABLE TO RECITE ALL 59 VALUABLE NUTRIENTS CONTAINED IN THE PERSIMMON IN FIVE MINUTES WITH NO ERRORS.

STUDENTS WILL BE ABLE TO DEMONSTRATE THEIR ABILITY TO INCREASE WORKING EFFICIENCY AND ENDURANCE BY USING ALL NINE OF THEIR RESPIRATORY PORES INDIVIDUALLY, IN COMBINATION, OR SIMULTANEOUSLY IN ACCORDANCE WITH THE CIRCUMSTANCES IN WHICH THEY FIND THEMSELVES.

STUDENTS WILL BE ABLE TO SELECT FROM A VARIETY OF AVAILABLE FOODS THOSE COMBINATIONS THAT PROVIDE AT LEAST THE DAILY MINIMUM NUTRITIONAL REQUIREMENTS, AND WILL BE ABLE TO PREPARE THOSE FOODS SO THAT NO NUTRITIONAL VALUES ARE LOST IN THE CULINARY PROCESS.

The FAR WEST LABOROATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT is a public non-profit organization located in the San Francisco Bay Area and supported in part by the Department of Health, Education, and Welfare.

The Laboratory's goal is to contribute to the improvement of educational practices. Through **educational development** activities, a staff of 250 works to **help children have more and better opportunities to learn.**

Educational development is a new discipline. It involves, first, focusing on an important but specific area in need of improvement and then inventing, field testing, and validating a generally useful solution to that problem or need. The solution may be a new self-contained product or an alternative process or system to be used by educators, by students, by parents, or by all of them together.

The Laboratory now has five major developmental divisions. Division I, directed by Dr. Ned A. Flanders, develops products and procedures that will result in more effective **teaching.** Division II, directed by Dr. Paul Hood, develops new instructional and training **systems;** for example, it is testing an employer-based career education model. Division III, directed by Dr. Glen Nimnicht, develops methods and materials that are **responsive** to the needs and interests of very young children. Division IV, directed by Dr. James Johnson, is investigating the problems of renewing **home-school linkage** so as to improve educational practice. Division V, directed by Dr. Larry Hutchins, develops ways and means of facilitating installation and **utilization** of educational innovations.

All Laboratory products undergo a rigorous research and development cycle prior to release for reproduction and distribution by other agencies. At least three phases of field testing—work with a prototype, a supervised performance field test, and an operational test under normal user conditions without Laboratory participation—precede formal external review and an official decision on acceptability. In view of this thorough evaluation, those who adopt Laboratory products and processes can know with certainty the kind of outcomes they can anticipate in their own educational setting.

The work of the Laboratory is governed by a Board of Directors appointed by the major educational agencies in the states of California, Nevada, and Utah.

John K. Hemphill
Laboratory Director